

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:42:18 ; Search time 37.8453 Seconds
(without alignments)
290.247 Million cell updates/sec

Title: US-10-026-911-1

Perfect score: 129

Sequence: 1 MGVFNYETETTSVIPAAALFKAFIC 25

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2443163 seqs, 439378781 residues

Total number of hits satisfying chosen parameters: 2443163

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A Geneseq_21.*

- 1: Geneseqp1980s.*
- 2: Geneseqp1990s.*
- 3: Geneseqp2000s.*
- 4: Geneseqp2001s.*
- 5: Geneseqp2002s.*
- 6: Geneseqp2003as.*
- 7: Geneseqp2003bs.*
- 8: Geneseqp2004s.*
- 9: Geneseqp2005s.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	129	100.0	25	5	Abb83630 Bet v 1-d
2	120	93.0	160	2	Aar04605 Major Bir
3	120	93.0	160	2	Aay25649 Betula sp
4	120	93.0	160	7	Adc34898 Tree alle
5	120	93.0	160	8	Adq14386 Birch pol
6	120	93.0	160	8	Adg52093 Birch pol
7	120	93.0	160	8	Adsl4364 Birch pol
8	120	93.0	172	8	Adm57312 Modular a
9	120	93.0	300	8	Adm57300 Modular a
10	115	89.1	125	8	Adr87216 Birch pol
11	115	89.1	159	4	Aay45216 Wild type
12	115	89.1	159	4	Abm00015 Major pol
13	115	89.1	159	5	Abg66960 Birch all
14	115	89.1	159	5	Abg66966 Birch all
15	115	89.1	159	5	Abg67097 Birch all
16	115	89.1	159	5	Abg66961 Birch all
17	115	89.1	159	5	Abg66959 Birch all
18	115	89.1	159	5	Abg67096 Birch all
19	115	89.1	159	5	Abg66962 Birch all
20	115	89.1	159	5	Abg67050 Birch all
21	115	89.1	159	5	Abg66964 Birch all
22	115	89.1	159	5	Abg66967 Birch all
23	115	89.1	159	5	Abg66967 Birch all
24	115	89.1	159	5	Abg67102 Birch all

25	115	89.1	159	5	ABG66958	Abg66958 Birch all
26	115	89.1	159	5	ABG67095	Abg67095 Birch all
27	115	89.1	159	5	ABG67101	Abg67101 Birch all
28	115	89.1	159	5	ABG66965	Abg66965 Birch all
29	115	89.1	159	5	ABG67099	Abg67099 Birch all
30	115	89.1	159	5	ABG67100	Abg67100 Birch all
31	115	89.1	159	5	ABG66963	Abg66963 Birch all
32	115	89.1	159	5	ABG66968	Abg66968 Birch all
33	115	89.1	159	5	ABG66990	Abg66990 Birch all
34	115	89.1	159	5	ABG67098	Abg67098 Birch all
35	115	89.1	159	5	ABG67106	Abg67106 Birch all
36	115	89.1	159	5	ABG67094	Abg67094 Birch all
37	115	89.1	159	5	AB884185	Ab884185 Birch pol
38	115	89.1	159	8	ADF51233	Adf51233 Bet v 1 a
39	115	89.1	160	5	ABG66970	Abg66970 Birch all
40	115	89.1	160	8	ADR87218	Adr87218 Birch pol
41	115	89.1	195	8	ADR87229	Adr87229 Chimeric
42	115	89.1	195	8	ADR87231	Adr87231 Chimeric
43	115	89.1	221	9	AEA81084	Aea81084 Grass/Bir
44	115	89.1	222	9	AEA81086	Aea81086 Grass/Bir
45	115	89.1	225	9	AEA81085	Aea81085 Birch/Gra

ALIGNMENTS

RESULT 1

ABB83630
ID ABB83630 standard; peptide; 25 AA.
XX
AC ABB83630;
XX
DT 10-OCT-2002 (first entry)
XX
DE Bet v 1-derived synthetic peptide #1.
XX
KW Non-allergenic; Bet v 1-derived peptide; allergy.
XX
OS Synthetic.
XX
PN EP1219299-A1.
XX
PD 03-JUL-2002.
XX
PF 28-DEC-2000; 2000EP-00128659.
XX
PR 28-DEC-2000; 2000EP-00128659.
XX
PA (SHAN-) SHAN BET-GES MBH.
XX
PI Focke M, Mahler V, Sperr WR, Valent P, Kraft D, Valenta R;
DR WPI; 2002-559804/60.
XX
PT Allergy vaccines comprise a peptide containing 8 to 50 amino acids.
XX
PS Example 1; Page 6; 27pp; English.
XX
CC The present invention relates to a new composition containing
CC antiallergic peptides useful in the treatment of allergic diseases. The
CC present peptide is an non-allergenic Bet v 1-derived synthetic peptide,
CC which does not contain Bet v 1-specific T-cell epitopes
XX
SQ Sequence 25 AA;

Query Match 100.0%; Score 129; DB 5; Length 25;

Best Local Similarity 100.0%; Pred. No. 5.4e-15;

Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNYETETTSVIPAAALFKAFIC 25

Db 1 MGVFNYETETTSVIPAAALFKAFIC 25

```

RESULT 2
AAR04605
ID AAR04605 standard; protein; 160 AA.
XX
AC AAR04605;
XX
DT 20-SEP-1990 (first entry)
XX
DE Major Birch allergen Bet v 1.
XX
KW major birch allergen; cDNA clone bank; Igb; Betula verrucosa.
XX
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Modified-site 83..85
FT /label= putative glycosylation site
XX
PN WO9004025-A.
PD 19-APR-1990.
XX
PF 14-OCT-1988; 88AT-00002554.
XX
PR 14-OCT-1988; 88AT-00002554.
XX
PA (BIOM-) BIOMAY BIOTECHNIK P.
XX
PI Breitenbac M, Kraft D, Rumpold H, Scheiner O, Breitenede H;
PI Pettenburg K, Valenta R;
XX
DR WPI; 1990-147842/19.
DR N-PSDB; AAQ04346.
XX
PT Identifying allergen expressing nucleotide sequences in clone bank - by
PT reacting with Ige from allergy patients, and new sequenced encoding major
PT birch allergen.
XX
PS Claim 8; Fig 10; 59pp; German.
XX
CC The gene encoding this protein is highly homologous with the disease-
CC resistance gene of the pea, which is only expressed in contact with plant
CC pathogens. It is thus expected that upon insertion into plants the
CC allergen gene will cause expression of a resistance protein under
CC conditions of stress or in contact with a pathogen
XX
SQ Sequence 160 AA;
Query Match 93.0%; Score 120; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 2e-12;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVENYETETTSVIPAARLFKAFI 24
Db |||||
1 MGVENYETETTSVIPAARLFKAFI 24

RESULT 3
AAY25649
ID AAY25649 standard; protein; 160 AA.
XX
AC AAY25649;
XX
DT 30-SEP-1999 (first entry)
XX
DE Betula sp. allergen 114922 Bet v 1 protein fragment.
XX
KW Major histocompatibility complex; class II; desensitising; human;
KW allergen; grass; tree; weed; pollen; fungi; mould; food; insect; stinging;
KW chironomidae; spider; mite; housefly; fruit fly; sheep blow fly; honeybee;
KW screw worm fly; grain weevil; silkworm; bee moth; mealworm; cat;
KW cockroach; beetle; dog; horse; cow; pig; sheep; rabbit; rat; guinea pig;

```

```

KW mice; gerbil; vaccine; treatment; prevention; hypersensitivity.
XX
OS Betula sp.
XX
PN WO9934826-A1.
XX
PD 15-JUL-1999.
XX
PF 11-JAN-1999; 99WO-GB0000080.
XX
PR 09-JAN-1998; 98GB-00000445.
XX
PR 21-SEP-1998; 98GB-00020474.
XX
PA (IMCO-) IMPERIAL COLLEGE INNOVATIONS LTD.
XX
PI Larche M, Kay AB;
XX
DR WPI; 1999-458255/38.
XX
PT Desensitizing patients to polypeptide allergens.
XX
PS Example 6; Page 68; 117pp; English.
XX
CC This invention describes a novel method of desensitizing a patient to a
CC polypeptide allergen and comprises administering to the patient a peptide
CC derived from the allergen where restriction to a MHC Class II molecule
CC possessed by the patient can be demonstrated for the peptide and the
CC peptide is able to induce a late phase response in an individual who
CC possesses the MHC Class II molecule. The methods can be used for
CC desensitizing patients to allergens present in e.g. grass, tree and weed
CC (including ragweed) pollens, fungi and moulds, foods, stinging insects,
CC the chironomidae (non-biting midges), spiders and mites, housefly, fruit
CC fly, sheep blow fly, screw worm fly, grain weevil, silkworm, honeybee,
CC non-biting midge larvae, bee moth larvae, mammals such as cat, dog, horse, pig,
CC Tenbrio molitor beetle, fungi and moulds, cockroach, larvae of
CC sheep, rabbit, rat, guinea pig, mice or gerbil. They can also be used to
CC produce immunological vaccines which may be used to prevent and/or treat
CC conditions involving hypersensitivity to allergens. This sequence
CC represents a birch (Betula sp.) allergen 114922 Bet v 1
XX
SQ Sequence 160 AA;
Query Match 93.0%; Score 120; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 2e-12;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVENYETETTSVIPAARLFKAFI 24
Db |||||
1 MGVENYETETTSVIPAARLFKAFI 24

RESULT 4
ADC34898
ID ADC34898 standard; protein; 160 AA.
XX
AC ADC34898;
XX
DT 18-DEC-2003 (first entry)
XX
DE Tree allergen Bet v 1.
XX
KW allergen; antigen; hyporesponsive; desensitisation; immunomodulator;
KW gene therapy; birch.
XX
OS Betula sp.
XX
PN WO2003047618-A2.
XX
PD 12-JUN-2003.
XX
PF 05-DEC-2002; 2002WO-GB005548.
XX
PR 05-DEC-2001; 2001US-0338385P.

```

GenCore version 5.1.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:43:45 ; Search time 12.8453 Seconds
(without alignments)
187.261 Million cell updates/sec

Title: US-10-026-911-1

Perfect score: 129

Sequence: 1 MGVFNYETTTSVIPAARLFKAFIC 25

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

PIR 80:*

1: PIR1:*

2: PIR2:*

3: PIR3:*

4: PIR4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	120	93.0	160	2 A55699	major pollen aller
2	120	93.0	160	2 S05376	major pollen aller
3	116	89.9	160	2 F55699	major pollen aller
4	116	89.9	160	2 A57427	major pollen aller
5	116	89.9	160	2 H55699	major pollen aller
6	116	89.9	160	2 B55699	major pollen aller
7	115	89.1	160	2 G55699	major pollen aller
8	115	89.1	160	2 D55699	major pollen aller
9	115	89.1	160	2 T17005	major pollen aller
10	114	88.4	160	2 C55699	major pollen aller
11	113	87.6	160	2 I55699	major pollen aller
12	109	84.5	160	2 E55699	major pollen aller
13	108	83.7	160	2 S30055	major pollen aller
14	108	83.7	160	2 S47250	gene 1-Sc1 protein
15	108	83.7	160	2 T17007	major pollen aller
16	108	83.7	160	2 T17006	major pollen aller
17	104	80.6	44	2 A53288	major pollen aller
18	103	79.8	51	2 B45786	major pollen aller
19	103	79.8	159	2 S47251	gene 1-Sc2 protein
20	102	79.1	159	2 T17004	major pollen aller
21	102	79.1	160	2 S30053	major pollen aller
22	102	79.1	160	2 S30054	major pollen aller
23	97	75.2	40	2 C53288	major pollen aller
24	94	72.9	160	2 S30056	major pollen aller
25	93	72.1	51	2 A45786	gene 1-Sc3 protein
26	92	71.3	160	2 S47249	major pollen aller
27	85	65.9	24	2 FC2001	major allergen - E
28	85	65.9	157	2 T09659	pathogenesis-relat
29	85	65.9	157	2 T09526	stress response ge

ALIGNMENTS

RESULT 1

A55699

major pollen allergen Bet v 1b - European white birch

C:Species: Betula pendula (European white birch)

C>Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004

C:Accession: A55699; S41401

R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, Ch. M.

J. Biol. Chem. 270, 2607-2613, 1995

A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom

A:Reference number: A55699; MUID:95155322; PMID:7852325

A:Accession: A55699

A:Molecule type: mRNA

A:Residues: 1-160 <SWO>

A:Cross-references: UNIPROT:P45431; UNIPARC:UPI000016DCFS; EMBL:X77200; NID:G450884; P1

A:Note: The source is designated as Betula verrucosa

C:Superfamily: pathogenesis-related protein

C:Keywords: pollen

F;2-160/Product: major pollen allergen Bet v 1b #status experimental <MAT>

Query Match 93.0%; Score 120; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 1.8e-12; Indels 0; Gaps 0;
Matches 24; Conservative 0; Mismatches 0;

QY 1 MGVFNYETTTSVIPAARLFKAFI 24

|||||

Db 1 MGVFNYETTTSVIPAARLFKAFI 24

RESULT 2

S05376

major pollen allergen Bet v 1 - European white birch

C:Species: Betula pendula (European white birch)

C>Date: 31-Mar-1990 #sequence_revision 31-Mar-1990 #text_change 09-Jul-2004

C:Accession: S05376; JC4834; B53288

R:Breiteneder, H.; Pettenburger, K.; Bito, A.; Valenta, R.; Kraft, D.; Rumpold, H.; Sch

EMBO J. 8, 1935-1938, 1989

A:Title: The gene coding for the major birch pollen allergen Betv1, is highly homologou

A:Reference number: S05376; MUID:90005395; PMID:2571499

A:Accession: S05376

A:Molecule type: mRNA

A:Residues: 1-160 <BRE>

A:Cross-references: UNIPROT:P15494; UNIPARC:UPI0000000314; EMBL:X15877; NID:G17937; PID

R:Kungl, A.J.; Susani, M.; Lindemann, A.; Machius, M.; Viesser, A.J.W.G.; Scheiner, O.;

Biochem. Biophys. Res. Commun. 223, 187-192, 1996

A:Title: Evidence for an alpha helical r cell epitope in the C-terminus of the main bir

A:Reference number: JC4834; MUID:96254050; PMID:8660368

A:Accession: JC4834

A>Status: nucleic acid sequence not shown

A:Molecule type: mRNA

A:Residues: 1-160 <KUN>

A:Cross-references: UNIPARC:UPI00000000314

R.; Ipsen, H.; Hansen, O.C.
Mol. Immunol. 28, 1279-1288, 1991
A; Title: The NH2-terminal amino acid sequence of the immunochemically partial identical s) Car b I and oak (Quercus alba) Que a I pollens.
A; Reference number: A53288; MUID:92072607; PMID:1961201
A; Accession: B53288
A; Status: preliminary
A; Molecule type: protein
A; Residues: 2-39, 'XX', 42-44 <PS>
A; Cross-references: UNIPARC:UPI0000177F58; PID:g239734; PIDN:AAB20452.1
A; Experimental source: pollen
A; Note: sequence extracted from NCBI backbone (NCBIP:68408)
A; Note: the source is designated as Betula verrucosa
C; Comment: This protein induces Igs synthesis by B cells in a T cell dependent manner.
C; Superfamily: pathogenesis-related protein
C; Keywords: pollen
F; 2-160/Product: major pollen allergen Bet v 1 #status experimental <MAT>

Query Match 93.0%; Score 120; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 1.8e-12;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNVEYETTSVIPAAFLFKAFI 24
Db 1 MGVFNVEYETTSVIPAAFLFKAFI 24

RESULT 3
F55699
major pollen allergen Bet v lg - European white birch
C; Species: Betula pendula (European white birch)
C; Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C; Accession: F55699; S41896
R; Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch. M.
J. Biol. Chem. 270, 2607-2613, 1995
A; Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A; Reference number: A55699; MUID:95155322; PMID:7852325
A; Accession: F55699
A; Molecule type: mRNA
A; Residues: 1-160 <SWO>
A; Cross-references: UNIPROT:P43180; UNIPARC:UPI000016DCFA; EMBL:X77269; NID:g452727; PID
A; Note: the source is designated as Betula verrucosa
C; Superfamily: pathogenesis-related protein
C; Keywords: pollen
F; 83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 89.9%; Score 116; DB 2; Length 160;
Best Local Similarity 95.8%; Pred. No. 8.6e-12;
Matches 23; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNVEYETTSVIPAAFLFKAFI 24
Db 1 MGVFNVEYETTSVIPAAFLFKAFI 24

RESULT 4
A57427
major pollen allergen Bet v lm/n - European white birch
C; Species: Betula pendula (European white birch)
C; Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C; Accession: A57427; S49450
R; Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch. M.
J. Biol. Chem. 270, 2607-2613, 1995
A; Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A; Reference number: A55699; MUID:95155322; PMID:7852325
A; Accession: A57427
A; Molecule type: mRNA
A; Residues: 1-160 <SWO>
A; Cross-references: UNIPROT:P43186; UNIPARC:UPI000016DCFE; GB:X81972; NID:g807868; PIDN:
R; Engel, E.; Kraft, D.; Scheiner, O.; Breitenbach, M.; Ferreira, F.

submitted to the EMBL Data Library, October 1994
A; Description: Isoforms of BETV1, the major birch pollen allergen, analyzed by liquid chrom
A; Reference number: S49450
A; Accession: S49450
A; Status: preliminary
A; Molecule type: mRNA
A; Residues: 1-160 <ENG>
A; Cross-references: UNIPARC:UPI000016DCFE; EMBL:X82028; NID:g807869; PIDN:CAA57550.1; P
A; Note: the source is designated as Betula verrucosa
C; Superfamily: pathogenesis-related protein
C; Keywords: pollen
F; 2-160/Product: major pollen allergen Bet v lm/n #status experimental <MAT>

Query Match 89.9%; Score 116; DB 2; Length 160;
Best Local Similarity 95.8%; Pred. No. 8.6e-12;
Matches 23; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNVEYETTSVIPAAFLFKAFI 24
Db 1 MGVFNVEYETTSVIPAAFLFKAFI 24

RESULT 5
H55699
major pollen allergen Bet v lk - European white birch
C; Species: Betula pendula (European white birch)
C; Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C; Accession: H55699; S41903
R; Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch. M.
J. Biol. Chem. 270, 2607-2613, 1995
A; Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom
A; Reference number: A55699; MUID:95155322; PMID:7852325
A; Accession: H55699
A; Molecule type: mRNA
A; Residues: 1-160 <SWO>
A; Cross-references: UNIPROT:P43184; UNIPARC:UPI000016DCFC; EMBL:X77272; NID:g458478; PI
A; Note: the source is designated as Betula verrucosa
C; Superfamily: pathogenesis-related protein
C; Keywords: pollen
F; 2-160/Product: major pollen allergen Bet v lk #status experimental <MAT>

Query Match 89.9%; Score 116; DB 2; Length 160;
Best Local Similarity 95.8%; Pred. No. 8.6e-12;
Matches 23; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNVEYETTSVIPAAFLFKAFI 24
Db 1 MGVFNVEYETTSVIPAAFLFKAFI 24

RESULT 6
B55699
major pollen allergen Bet v lc - European white birch
C; Species: Betula pendula (European white birch)
C; Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C; Accession: B55699; S41897
R; Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch. M.
J. Biol. Chem. 270, 2607-2613, 1995
A; Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom
A; Reference number: A55699; MUID:95155322; PMID:7852325
A; Accession: B55699
A; Molecule type: mRNA
A; Residues: 1-160 <SWO>
A; Cross-references: UNIPROT:P43176; UNIPARC:UPI000016DCF6; EMBL:X77265; NID:g452729; PI
A; Note: the source is designated as Betula verrucosa
C; Superfamily: pathogenesis-related protein
C; Keywords: pollen
F; 2-160/Product: major pollen allergen Bet v lc #status experimental <MAT>

Query Match 89.9%; Score 116; DB 2; Length 160;
Best Local Similarity 95.8%; Pred. No. 8.6e-12;
Matches 23; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:43:29 ; Search time 42.1271 Seconds
(without alignments)
418.691 Million cell updates/sec

Title: US-10-026-911-1
Perfect score: 129
Sequence: 1 MGVFNYETETTSVIPARLFKAFIC 25

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2166443 seqs, 705528306 residues

Total number of hits satisfying chosen parameters: 2166443

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Uniprot 05.80.*
1: uniprot_sprot.*
2: uniprot_trembl.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	120	93.0	120	2 Q9SCH7_BETVE	Q9sch7 betula verr
2	120	93.0	120	2 Q9SCH11_BETVE	Q9sch11 betula verr
3	120	93.0	160	2 Q39431_BETVE	Q39431 betula verr
4	120	93.0	160	2 Q9SCH6_BETVE	Q9sch6 betula verr
5	120	93.0	160	2 Q9SW1_BETVE	Q9sw1 betula verr
6	120	93.0	160	2 Q24642_BETVE	Q24642 betula verr
7	120	93.0	160	2 Q23751_BETVE	Q23751 betula verr
8	120	93.0	160	2 Q23752_BETVE	Q23752 betula verr
9	120	93.0	160	2 Q23753_BETVE	Q23753 betula verr
10	120	93.0	160	2 Q39427_BETVE	Q39427 betula verr
11	120	93.0	160	2 Q39428_BETVE	Q39428 betula verr
12	120	93.0	160	2 Q39429_BETVE	Q39429 betula verr
13	120	93.0	160	2 Q546U3_BETVE	Q546U3 betula verr
14	120	93.0	160	2 Q96365_BETVE	Q96365 betula verr
15	120	93.0	160	2 Q96366_BETVE	Q96366 betula verr
16	120	93.0	160	2 Q96367_BETVE	Q96367 betula verr
17	120	93.0	160	2 Q96368_BETVE	Q96368 betula verr
18	120	93.0	160	2 Q96370_BETVE	Q96370 betula verr
19	120	93.0	160	2 Q96371_BETVE	Q96371 betula verr
20	120	93.0	160	2 Q9AYS2_9ROSI	Q9ays2 betula plat
21	120	93.0	160	2 Q9AYS3_9ROSI	Q9ays3 betula verr
22	120	93.0	160	2 Q9SCH5_BETVE	Q9sch5 betula verr
23	120	93.0	160	2 Q9SCH9_BETVE	Q9sch9 betula verr
24	120	93.0	160	2 Q9SCH10_BETVE	Q9sch10 betula verr
25	120	93.0	160	2 Q9SCH12_BETVE	Q9sch12 betula verr
26	120	93.0	160	2 Q9SCI3_BETVE	Q9sci3 betula verr
27	120	93.0	160	2 Q9SYW0_BETVE	Q9syw0 betula verr
28	120	93.0	160	2 Q9ZS38_BETVE	Q9zs38 betula verr
29	120	93.0	160	2 Q9ZS39_BETVE	Q9zs39 betula verr
30	116	89.9	160	2 Q23754_BETVE	Q23754 betula verr
31	116	89.9	160	2 Q39453_CORAV	Q39453 corylus ave

32	115	89.1	51	2 Q9S8S9_9ROSI	Q9s8s9 betula sp.
33	115	89.1	159	1 BEVIA_BETVE	Pl5494 betula verr
34	115	89.1	159	1 BEVIB_BETVE	P45431 betula verr
35	115	89.1	159	2 Q546V0_BETVE	Q546V0 betula verr
36	115	89.1	160	2 Q42499_BETVE	Q42499 betula verr
37	115	89.1	160	2 Q39426_BETVE	Q39426 betula verr
38	115	89.1	160	2 Q43550_MALDO	Q43550 malus domes
39	115	89.1	160	2 Q9AYS4_9ROSI	Q9ays4 betula plat
40	115	89.1	160	2 Q9SYW2_BETVE	Q9syw2 betula verr
41	115	89.1	161	2 Q96381_CARBE	Q96381 carpinus be
42	115	89.1	161	2 Q96382_CARBE	Q96382 carpinus be
43	114	88.4	160	2 Q9S425_BETVE	Q39425 betula verr
44	114	88.4	160	2 Q9SCH8_BETVE	Q9sch8 betula verr
45	111	86.0	159	1 BEVIC_BETVE	P43176 betula verr

ALIGNMENTS

RESULT 1
Q9SCH7 BETVE
ID Q9SCH7 BETVE PRELIMINARY; PRT; 120 AA.
AC Q9SCH7_1
DT 01-MAY-2000 (Tremblrel. 13, Created)
DT 01-MAY-2000 (Tremblrel. 13, Last sequence update)
DT 01-JUN-2003 (Tremblrel. 24, Last annotation update)
DE Pollen allergen Betv1, isoform at87.
GN Name=betv1;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
OC eurosids I; Fagales; Betulaceae; Betula.
OX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pollen.
RX MEDLINE=99437514; PubMed=10509815; DOI=10.1016/S0161-5890(99)00078-4;
RA Friedl-Hajek R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
RA Leberl K., Scheiner O., Breiteneder H.,
RT "New Bet v 1 isoforms including a naturally occurring truncated form
of the protein derived from Austrian birch pollen."
RL Mol. Immunol. 36:639-645(1999).
DR EMBL; AJ006913; CAA07328.1; -; mRNA.
DR HSSP; PL5494; 1B6F.
DR SMR; Q9SCH7; 2-119.
DR InterPro; IPR000916; Bet v I_1.
DR Pfam; PF00407; Bet v I_1.
DR PRINTS; PR00634; BETALLERGEN.
DR ProDom; PD000531; Bet_v_I; 1.
SQ SEQUENCE 120 AA; 13073 MW; 95EB4309C0808BFC CRC64;

Query Match 93.0%; Score 120; DB 2; Length 120;
Best Local Similarity 100.0%; Pred. No. 6.9e-12; Gaps 0;
Matches 24; Conservative 0; Mismatches 0; Indels 0;

QY	1	MGVFNYETETTSVIPARLFKAFI 24
Db	1	MGVFNYETETTSVIPARLFKAFI 24

RESULT 2
Q9SCH11 BETVE
ID Q9SCH11 BETVE PRELIMINARY; PRT; 120 AA.
AC Q9SCH11_1
DT 01-MAY-2000 (Tremblrel. 13, Created)
DT 01-MAY-2000 (Tremblrel. 13, Last sequence update)
DT 01-JUN-2003 (Tremblrel. 24, Last annotation update)
DE Pollen allergen Betv1, isoform at14.
GN Name=betv1;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
OC eurosids I; Fagales; Betulaceae; Betula.

```

OX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pollen;
RX MEDLINE=99437514; PubMed=10509815; DOI=10.1016/S0161-5890(99)00078-4;
RA Friedl-Hajek R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
RA Leberl K., Scheiner O., Breiteneder H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
of the protein derived from Austrian birch pollen.";
RL Mol. Immunol. 36:639-645(1999).
DR EMBL; AJ006905; CAA07320.1; -; mRNA.
DR HSSP; P15494; 1B6F.
DR SMR; Q9SCH6; 2-119.
DR InterPro; IPR000916; Bet_v_I.
DR Pfam; PF00407; Bet_v_I; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR ProDom; PD000531; Bet_v_I; 1.
SQ SEQUENCE 120 AA; 13055 MW; 95EB4309C4CB4CBF CRC64;

Query Match 93.0%; Score 120; DB 2; Length 120;
Best Local Similarity 100.0%; Pred. No. 6.9e-12;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNYETETTSVIPARLFKAFI 24
DB 1 MGVFNYETETTSVIPARLFKAFI 24

RESULT 3
Q39431.BETVE
ID Q39431.BETVE PRELIMINARY; PRT; 160 AA.
AC Q39431;
DT 01-NOV-1996 (TrEMBLrel. 01, Created)
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE Major allergen Bet v 1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
OC Eurosid I; Fagales; Betulaceae; Betula.
OX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Leaves;
RX MEDLINE=97473499; PubMed=9332353; DOI=10.1016/S0378-1119(97)00246-1;
RA Hoffmann-Sommergruber K., Vaneek-Krebitz M., Radauer C., Wen J.,
RA Ferreira F., Scheiner O., Breiteneder H.;
RT "Genomic characterization of members of the Bet v 1 family: genes
coding for allergens and pathogenesis-related proteins share intron
positions.";
RL Gene 197:91-100(1997).
DR EMBL; Z72438; CAA96547.1; -; Genomic_DNA.
DR HSSP; P15494; 1BV1.
DR SMR; Q39431; 2-160.
DR InterPro; IPR000916; Bet_v_I.
DR Pfam; PF00407; Bet_v_I; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR ProDom; PD000531; Bet_v_I; 1.
SQ SEQUENCE 160 AA; 17640 MW; 3CCEF6B15EB655E5 CRC64;

Query Match 93.0%; Score 120; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 9.6e-12;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNYETETTSVIPARLFKAFI 24
DB 1 MGVFNYETETTSVIPARLFKAFI 24

RESULT 4
Q9SCH6.BETVE
ID Q9SCH6.BETVE PRELIMINARY; PRT; 160 AA.
AC Q9SCH6;
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE Pollen allergen Betv1, isoform at5.
OS Name=betv1;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
OC Eurosid I; Fagales; Betulaceae; Betula.
OX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pollen;
RX MEDLINE=99437514; PubMed=10509815; DOI=10.1016/S0161-5890(99)00078-4;
RA Friedl-Hajek R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
RA Leberl K., Scheiner O., Breiteneder H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
of the protein derived from Austrian birch pollen.";
RL Mol. Immunol. 36:639-645(1999).
DR EMBL; AJ006914; CAA07329.1; -; mRNA.
DR HSSP; P15494; 1BV1.
DR SMR; Q9SCH6; 2-160.
DR InterPro; IPR000916; Bet_v_I.
DR Pfam; PF00407; Bet_v_I; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR ProDom; PD000531; Bet_v_I; 1.
SQ SEQUENCE 160 AA; 17604 MW; 5A416C0518E58C15 CRC64;

Query Match 93.0%; Score 120; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 9.6e-12;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNYETETTSVIPARLFKAFI 24
DB 1 MGVFNYETETTSVIPARLFKAFI 24

RESULT 5
Q9SYW1.BETVE
ID Q9SYW1.BETVE PRELIMINARY; PRT; 160 AA.
AC Q9SYW1;
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE Isoallergen Bet v 1 b2.
OS Name=Betv1b2;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
OC Eurosid I; Fagales; Betulaceae; Betula.
OX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RA Son D.Y., Hausteijn D., Vieths S.;
RL Submitted (JAN-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF124838; AAD26561.1; -; mRNA.
DR HSSP; P15494; 1BV1.
DR SMR; Q9SYW1; 2-160.
DR InterPro; IPR000916; Bet_v_I.
DR Pfam; PF00407; Bet_v_I; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR ProDom; PD000531; Bet_v_I; 1.
SQ SEQUENCE 160 AA; 17565 MW; E9B5F580BBD1AC5 CRC64;

Query Match 93.0%; Score 120; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 9.6e-12;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNYETETTSVIPARLFKAFI 24
DB 1 MGVFNYETETTSVIPARLFKAFI 24

```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:44:15 ; Search time 19.7514 Seconds
(without alignments)
104.645 Million cell updates/sec

Title: US-10-026-911-1
Perfect score: 129
Sequence: 1 MGVEFYETETTSVIPARLFKAFIC 25

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 572060 seqs, 82675679 residues

Total number of hits satisfying chosen parameters: 572060

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued Patents AA:*
1: /cgn2_6/ptodata/1/iaa/5_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/6_COMB.pep:*
3: /cgn2_6/ptodata/1/iaa/H_COMB.pep:*
4: /cgn2_6/ptodata/1/iaa/PCUS_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/RE_COMB.pep:*
6: /cgn2_6/ptodata/1/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	120	93.0	160	1	US-07-847-010-23
2	109	84.5	160	1	US-07-847-010-3
3	108	83.7	160	1	US-07-847-010-17
4	102	79.1	160	1	US-07-847-010-11
5	102	79.1	160	1	US-07-847-010-14
6	94	72.9	160	1	US-07-847-010-20
7	70	54.3	158	6	5312912-2
8	69	53.5	158	2	US-08-964-722-2
9	48	37.2	304	2	US-08-328-352-6459
10	47	36.4	976	2	US-08-750-141A-1
11	45	34.9	166	2	US-08-583-110-4577
12	45	34.9	320	2	US-08-252-991A-20760
13	44	34.1	241	2	US-08-248-796A-14409
14	44	34.1	462	1	US-08-752-307B-7
15	44	34.1	462	1	US-08-707-802-7
16	44	34.1	462	2	US-09-991-326-7
17	44	34.1	465	1	US-08-752-307B-5
18	44	34.1	465	2	US-08-707-802-5
19	44	34.1	465	2	US-09-991-326-5
20	43	33.3	68	2	US-08-248-796A-25546
21	43	33.3	523	2	US-08-270-767-43823
22	43	33.3	2058	2	US-09-949-016-6835
23	43	33.3	2111	2	US-09-949-016-10199
24	42	32.6	265	2	US-08-543-681A-5709
25	42	32.6	298	2	US-09-489-039A-8031
26	42	32.6	349	2	US-08-469-318-139
27	42	32.6	349	2	US-08-468-609A-139

Sequence 139, App
Sequence 139, App
Sequence 139, App
Sequence 8, Appli
Sequence 8903, Ap
Sequence 2727, Ap
Sequence 6, Appli
Sequence 4986, Ap
Sequence 645, App
Sequence 9811, Ap
Sequence 4308, Ap
Sequence 168, App
Sequence 168, App
Sequence 166, App
Sequence 5220, Ap
Sequence 29606, A
Sequence 4, Appli

ALIGNMENTS

RESULT 1
US-07-847-010-23
; Sequence 23, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Helmo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hofmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 23:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:

RESULT 4
US-07-847-010-11
; Sequence 11, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 10:01:54 ; Search time 30.5249 Seconds
(without alignments)
342.204 Million cell updates/sec

Title: US-10-026-911-1

Perfect score: 129

Sequence: 1 MGVFNVTETTSVIPAARLFKAFIC 25

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1867569 seqs, 417829326 residues

Total number of hits satisfying chosen parameters: 1867569

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Published Applications AA Main:*

1: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pap.*

2: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pap.*

3: /cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.pap.*

4: /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pap.*

5: /cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pap.*

6: /cgn2_6/ptodata/1/pubpaa/US11_PUBCOMB.pap.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	129	100.0	25	4	US-10-026-911-1
2	120	93.0	160	4	US-10-440-516-1
3	120	93.0	160	4	US-10-440-516-2
4	120	93.0	160	4	US-10-809-689-87
5	115	89.1	125	5	US-10-799-514-5
6	115	89.1	159	3	US-09-881-009B-1
7	115	89.1	159	3	US-09-847-208-34
8	115	89.1	159	3	US-09-957-806A-6
9	115	89.1	159	4	US-10-001-245-3
10	115	89.1	159	4	US-10-001-245-9
11	115	89.1	159	4	US-10-001-245-92
12	115	89.1	159	4	US-10-719-553-37
13	115	89.1	159	4	US-10-698-855-5
14	115	89.1	160	4	US-10-001-245-1
15	115	89.1	160	4	US-10-001-245-6
16	115	89.1	160	5	US-10-799-514-7
17	115	89.1	195	5	US-10-799-514-18
18	115	89.1	195	5	US-10-799-514-20
19	111	86.0	159	3	US-09-847-208-35
20	111	86.0	159	3	US-09-847-208-39
21	111	86.0	159	3	US-09-847-208-41
22	111	86.0	159	3	US-09-847-208-43
23	110	85.3	159	3	US-09-847-208-37
24	110	85.3	159	3	US-09-847-208-40
25	110	85.3	159	3	US-09-847-208-57
26	110	85.3	159	4	US-10-001-245-5
27	109	84.5	159	3	US-09-847-208-36

28 108 83.7 159 3 US-09-847-208-42 Sequence 42, Appli

29 107 82.9 159 4 US-10-001-245-2 Sequence 2, Appli

30 107 82.9 159 4 US-10-001-245-4 Sequence 4, Appli

31 107 82.9 159 4 US-10-440-516-47 Sequence 47, Appli

32 107 82.9 160 4 US-10-001-245-7 Sequence 7, Appli

33 107 82.9 160 4 US-10-001-245-8 Sequence 8, Appli

34 107 82.9 160 4 US-10-001-245-10 Sequence 10, Appli

35 107 82.9 160 4 US-10-001-245-11 Sequence 11, Appli

36 107 82.9 160 4 US-10-001-245-12 Sequence 12, Appli

37 107 82.9 160 4 US-10-440-516-3 Sequence 3, Appli

38 107 82.9 160 4 US-10-440-516-4 Sequence 4, Appli

39 107 82.9 160 4 US-10-440-516-5 Sequence 5, Appli

40 107 82.9 160 4 US-10-440-516-6 Sequence 6, Appli

41 107 82.9 160 4 US-10-440-516-7 Sequence 7, Appli

42 107 82.9 160 4 US-10-440-516-8 Sequence 8, Appli

43 107 82.9 160 4 US-10-440-516-13 Sequence 13, Appli

44 107 82.9 161 4 US-10-440-516-43 Sequence 43, Appli

45 107 82.9 161 4 US-10-440-516-44 Sequence 44, Appli

ALIGNMENTS

RESULT 1

US-10-026-911-1

; Sequence 1, Application US/10026911

; Publication No. US20030078201A1

; GENERAL INFORMATION:

; APPLICANT: Focke, Margarete

; APPLICANT: Mahler, Vera

; APPLICANT: Speer, Wolfgang R.

; APPLICANT: Valent, Peter

; APPLICANT: Kraft, Dietrich

; APPLICANT: Valenta, Rudolf

; TITLE OF INVENTION: Allergy Vaccines and Their Preparation

; FILE REFERENCE: 0273-0005

; CURRENT APPLICATION NUMBER: US/10/026,911

; CURRENT FILING DATE: 2002-07-24

; NUMBER OF SEQ ID NOS: 6

; SOFTWARE: PatentIn Ver. 2.1

; SEQ ID NO 1

; LENGTH: 25

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: Description of Artificial Sequence:

; OTHER INFORMATION: solvent-exposed peptide

US-10-026-911-1

Query Match 100.0%; Score 129; DB 4; Length 25;

Best Local Similarity 100.0%; Pred. No. 9.7e-14;

Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNVTETTSVIPAARLFKAFIC 25

Db 1 MGVFNVTETTSVIPAARLFKAFIC 25

RESULT 2

US-10-440-516-1

; Sequence 1, Application US/10440516

; Publication No. US20040043438A1

; GENERAL INFORMATION:

; APPLICANT: Holm, Jens

; APPLICANT: Ferreras, Mercedes

; TITLE OF INVENTION: Allergen mutants

; FILE REFERENCE: 04305/100L446-US1

; CURRENT APPLICATION NUMBER: US/10/440,516

; CURRENT FILING DATE: 2003-05-16

; PRIOR APPLICATION NUMBER: US 60/381,440

; PRIOR FILING DATE: 2002-05-16

; NUMBER OF SEQ ID NOS: 89

; SOFTWARE: PatentIn version 3.2

```
; SEQ ID NO 1
; LENGTH: 160
; TYPE: PRT
; ORGANISM: Betula verrucosa
US-10-440-516-1

Query Match          93.0%; Score 120; DB 4; Length 160;
Best Local Similarity 100.0%; Pred. No. 2.4e-11;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNYETETTSVIPAAFLFKAFI 24
Db 1 MGVFNYETETTSVIPAAFLFKAFI 24

RESULT 3
US-10-440-516-2
; Sequence 2, Application US/10440516
; Publication No. US20040043438A1
; GENERAL INFORMATION:
; APPLICANT: Holm, Jens
; TITLE OF INVENTION: Allergens, Mercedes
; FILE REFERENCE: 04305/100L446-US1
; CURRENT APPLICATION NUMBER: US/10/440,516
; CURRENT FILING DATE: 2003-05-16
; PRIOR APPLICATION NUMBER: US 60/381,440
; PRIOR FILING DATE: 2002-05-16
; NUMBER OF SEQ ID NOS: 89
; SOFTWARE: Patent in version 3.2
; SEQ ID NO 2
; LENGTH: 160
; TYPE: PRT
; ORGANISM: Betula verrucosa
US-10-440-516-2

Query Match          93.0%; Score 120; DB 4; Length 160;
Best Local Similarity 100.0%; Pred. No. 2.4e-11;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNYETETTSVIPAAFLFKAFI 24
Db 1 MGVFNYETETTSVIPAAFLFKAFI 24

RESULT 4
US-10-809-689-87
; Sequence 87, Application US/10809689
; Publication No. US20040265342A1
; GENERAL INFORMATION:
; APPLICANT: Eric Potter Clarkson
; TITLE OF INVENTION: Methods and compositions for desensitisation
; FILE REFERENCE: 5538/1010
; CURRENT APPLICATION NUMBER: US/10/809,689
; CURRENT FILING DATE: 2004-03-25
; PRIOR APPLICATION NUMBER: PCT/GB99/00080
; PRIOR FILING DATE: 1999-01-11
; PRIOR APPLICATION NUMBER: GB/9800445.0
; PRIOR FILING DATE: 1998-01-09
; PRIOR APPLICATION NUMBER: GB/9820474.6
; PRIOR FILING DATE: 1998-09-21
; NUMBER OF SEQ ID NOS: 124
; SOFTWARE: Patent in version 3.0
; SEQ ID NO 87
; LENGTH: 160
; TYPE: PRT
; ORGANISM: Betula pendula
US-10-809-689-87

Query Match          93.0%; Score 120; DB 5; Length 160;
Best Local Similarity 100.0%; Pred. No. 2.4e-11;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNYETETTSVIPAAFLFKAFI 24
Db 1 MGVFNYETETTSVIPAAFLFKAFI 24

RESULT 5
US-10-799-514-5
; Sequence 5, Application US/10799514
; Publication No. US20040241178A1
; GENERAL INFORMATION:
; APPLICANT: Spertini, Francois
; TITLE OF INVENTION: Allergen Peptide Fragments and Use Thereof
; FILE REFERENCE: 25720-502
; CURRENT APPLICATION NUMBER: US/10/799,514
; CURRENT FILING DATE: 2004-03-12
; PRIOR APPLICATION NUMBER: 60/455,004
; PRIOR FILING DATE: 2003-03-14
; NUMBER OF SEQ ID NOS: 23
; SOFTWARE: Patent in Ver. 2.1
; SEQ ID NO 5
; LENGTH: 125
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
US-10-799-514-5

Query Match          89.1%; Score 115; DB 5; Length 125;
Best Local Similarity 95.8%; Pred. No. 1.2e-10;
Matches 23; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MGVFNYETETTSVIPAAFLFKAFI 24
Db 1 MGVFNYETETTSVIPAAFLFKAFI 24

RESULT 6
US-09-981-009B-1
; Sequence 1, Application US/09981009B
; Publication No. US20030041354A1
; GENERAL INFORMATION:
; APPLICANT: Kjaerulff, Soren
; TITLE OF INVENTION: Transgenic Plants
; FILE REFERENCE: 10082.200-US
; CURRENT APPLICATION NUMBER: US/09/981,009B
; CURRENT FILING DATE: 2002-06-14
; NUMBER OF SEQ ID NOS: 5
; SOFTWARE: Patent in version 3.1
; SEQ ID NO 1
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula pendula
US-09-981-009B-1

Query Match          89.1%; Score 115; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 1.6e-10;
Matches 23; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 GVFNYETETTSVIPAAFLFKAFI 24
Db 1 GVFNYETETTSVIPAAFLFKAFI 23

RESULT 7
US-09-847-208-34
; Sequence 34, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 10:05:54 ; Search time 5.52486 Seconds
(without alignments)
192.264 Million cell updates/sec

Title: US-10-026-911-1

Perfect score: 129

Sequence: 1 MGVFNYETETTSVIPARLFKAFIC 25

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 217505 seqs, 42489236 residues

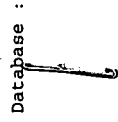
Total number of hits satisfying chosen parameters: 217505

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Listing first 45 summaries



Database : Published Applications_AA_New.*

- 1: /SIDSS5/ptodata/1/pubpaa/US08_NEW_PUB.pep.*
- 2: /SIDSS5/ptodata/1/pubpaa/US06_NEW_PUB.pep.*
- 3: /SIDSS5/ptodata/1/pubpaa/US07_NEW_PUB.pep.*
- 4: /SIDSS5/ptodata/1/pubpaa/PCT_NEW_PUB.pep.*
- 5: /SIDSS5/ptodata/1/pubpaa/US09_NEW_PUB.pep.*
- 6: /SIDSS5/ptodata/1/pubpaa/US10_NEW_PUB.pep.*
- 7: /SIDSS5/ptodata/1/pubpaa/US11_NEW_PUB.pep.*
- 8: /SIDSS5/ptodata/1/pubpaa/US60_NEW_PUB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
1	120	93.0	160	6 US-10-498-026-81	Sequence 81, Appl
2	120	93.0	172	7 US-11-102-883-18	Sequence 18, Appl
3	120	93.0	289	7 US-11-102-883-26	Sequence 26, Appl
4	120	93.0	300	7 US-11-102-883-6	Sequence 6, Appl
5	104	80.6	44	6 US-10-498-026-87	Sequence 87, Appl
6	97	75.2	40	6 US-10-498-026-86	Sequence 86, Appl
7	59	45.7	24	6 US-10-498-026-85	Sequence 85, Appl
8	47	36.4	283	7 US-11-102-883-32	Sequence 32, Appl
9	47	36.4	294	7 US-11-102-883-30	Sequence 30, Appl
10	47	36.4	972	7 US-11-177-894-17	Sequence 17, Appl
11	47	36.4	976	7 US-11-148-770-31	Sequence 31, Appl
12	47	36.4	976	7 US-11-177-894-15	Sequence 15, Appl
13	47	36.4	976	7 US-11-177-894-16	Sequence 16, Appl
14	47	36.4	976	7 US-11-177-894-18	Sequence 18, Appl
15	47	36.4	976	7 US-11-177-894-19	Sequence 19, Appl
16	47	36.4	976	7 US-11-177-894-20	Sequence 20, Appl
17	47	36.4	976	7 US-11-177-894-21	Sequence 21, Appl
18	47	36.4	976	7 US-11-154-287-1	Sequence 1, Appl
19	47	36.4	976	7 US-11-154-988-1	Sequence 1, Appl
20	43	33.3	194	7 US-11-188-298-16666	Sequence 16666, A
21	43	33.3	559	7 US-11-079-463-9128	Sequence 9128, Ap
22	43	33.3	2057	7 US-11-285-818-10	Sequence 10, Appl
23	43	33.3	2058	7 US-11-072-175-188	Sequence 188, App
24	43	33.3	2058	7 US-11-285-818-17	Sequence 17, Appl
25	42.5	32.9	687	6 US-10-055-877-203	Sequence 203, App

26 42 32.6 505 7 US-11-188-298-16547 Sequence 16547, A
27 42 32.6 511 7 US-11-188-298-15305 Sequence 15305, A
28 41 31.8 233 7 US-11-188-298-5729 Sequence 5729, Ap
29 41 31.8 311 7 US-11-156-084-203 Sequence 203, App
30 41 31.8 314 7 US-11-188-298-4152 Sequence 4152, Ap
31 41 31.8 389 7 US-11-087-099-5423 Sequence 5423, Ap
32 41 31.8 436 6 US-10-517-939-10 Sequence 10, Appl
33 41 31.8 570 7 US-11-096-568A-29686 Sequence 29686, A
34 41 31.8 572 7 US-11-052-554A-129 Sequence 129, App
35 41 31.8 695 7 US-11-096-568A-29685 Sequence 29685, A
36 41 31.8 752 7 US-11-096-568A-29684 Sequence 29684, A
37 41 31.8 1043 7 US-11-079-463-9606 Sequence 9606, Ap
38 40 31.0 251 7 US-11-188-298-20588 Sequence 20588, A
39 40 31.0 258 7 US-11-188-298-409 Sequence 409, App
40 40 31.0 278 7 US-11-096-568A-32957 Sequence 32957, A
41 40 31.0 322 7 US-11-096-568A-18470 Sequence 18470, A
42 40 31.0 324 7 US-11-096-568A-18469 Sequence 18469, A
43 40 31.0 351 7 US-11-096-568A-18468 Sequence 18468, A
44 40 31.0 735 7 US-11-188-298-3774 Sequence 3774, Ap
45 40 31.0 1018 7 US-11-079-463-5592 Sequence 5592, Ap

ALIGNMENTS

RESULT 1
US-10-498-026-81
; Sequence 81, Application US/10498026
; Publication No. US20060024334A1
; GENERAL INFORMATION:
; APPLICANT: CIRCASSIA LIMITED
; TITLE OF INVENTION: IMMUNOTHERAPEUTIC METHODS AND SYSTEMS
; FILE REFERENCE: N.87430 WO GCW
; CURRENT APPLICATION NUMBER: US/10/498,026
; CURRENT FILING DATE: 2004-06-04
; NUMBER OF SEQ ID NOS: 118
; SOFTWARE: Patentin version 3.1
; SEQ ID NO 81
; LENGTH: 160
; TYPE: PRT
; ORGANISM: Betula pendula
US-10-498-026-81

Query Match 93.0%; Score 120; DB 6; Length 160;
Best Local Similarity 100.0%; Pred. No. 3.8e-13;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MGVFNYETETTSVIPARLFKAFI 24
Db 1 MGVFNYETETTSVIPARLFKAFI 24

RESULT 2
US-11-102-883-18
; Sequence 18, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lampung, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods an
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: Patentin version 3.2

```
; SEQ ID NO 18
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Betula verrucosa
US-11-102-883-18

Query Match          93.0%; Score 120; DB 7; Length 172;
Best Local Similarity 100.0%; Pred. No. 4.2e-13;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNYYETTTTSVIPAAARLFKAFI 24
    |||||
Db 13 MGVFNYYETTTTSVIPAAARLFKAFI 36

RESULT 3
US-11-102-883-26
; Sequence 26, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lamping, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 26
; LENGTH: 289
; TYPE: PRT
; ORGANISM: tat-ti-bet v 1
US-11-102-883-26

Query Match          93.0%; Score 120; DB 7; Length 289;
Best Local Similarity 100.0%; Pred. No. 7.7e-13;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNYYETTTTSVIPAAARLFKAFI 24
    |||||
Db 130 MGVFNYYETTTTSVIPAAARLFKAFI 153

RESULT 4
US-11-102-883-6
; Sequence 6, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lamping, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 6

; SEQ ID NO 19
; LENGTH: 300
; TYPE: PRT
; ORGANISM: Human immunodeficiency virus + Homo sapiens + Betula verrucosa
US-11-102-883-6

Query Match          93.0%; Score 120; DB 7; Length 300;
Best Local Similarity 100.0%; Pred. No. 8.1e-13;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MGVFNYYETTTTSVIPAAARLFKAFI 24
    |||||
Db 141 MGVFNYYETTTTSVIPAAARLFKAFI 164

RESULT 5
US-10-498-026-87
; Sequence 87, Application US/10498026
; Publication No. US20060024334A1
; GENERAL INFORMATION:
; APPLICANT: CIRCASSIA LIMITED
; TITLE OF INVENTION: IMMUNOTHERAPEUTIC METHODS AND SYSTEMS
; FILE REFERENCE: N.87430 WO GCW
; CURRENT APPLICATION NUMBER: US/10/498,026
; CURRENT FILING DATE: 2004-06-04
; NUMBER OF SEQ ID NOS: 118
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 87
; LENGTH: 44
; TYPE: PRT
; ORGANISM: Alnus glutinosa
US-10-498-026-87

Query Match          80.6%; Score 104; DB 6; Length 44;
Best Local Similarity 91.3%; Pred. No. 4.7e-11;
Matches 21; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 2 GVFNYETTTTSVIPAAARLFKAFI 24
    |||||
Db 1 GVFNYEATPTSPVIPAAARLFKAFI 23

RESULT 6
US-10-498-026-86
; Sequence 86, Application US/10498026
; Publication No. US20060024334A1
; GENERAL INFORMATION:
; APPLICANT: CIRCASSIA LIMITED
; TITLE OF INVENTION: IMMUNOTHERAPEUTIC METHODS AND SYSTEMS
; FILE REFERENCE: N.87430 WO GCW
; CURRENT APPLICATION NUMBER: US/10/498,026
; CURRENT FILING DATE: 2004-06-04
; NUMBER OF SEQ ID NOS: 118
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 86
; LENGTH: 40
; TYPE: PRT
; ORGANISM: Carpinus betulus
; FEATURE:
; NAME/KEY: MISC FEATURE
; LOCATION: (39)-(39)
; OTHER INFORMATION: Xaa = any amino acid
US-10-498-026-86

Query Match          75.2%; Score 97; DB 6; Length 40;
Best Local Similarity 78.3%; Pred. No. 6.8e-10;
Matches 18; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

QY 2 GVFNYETTTTSVIPAAARLFKAFI 24
    |||||
Db 1 GVFNYEATPTSPVIPAAARLFKAFI 23

RESULT 7
```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:42:18 ; Search time 46.9282 Seconds
(without alignments)
290.247 Million cell updates/sec

Title: US-10-026-911-2
Perfect score: 161
Sequence: 1 LFPKVAQAISVENIEGNGPGTIKKISFC 31

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2443163 seqs, 43937871 residues

Total number of hits satisfying chosen parameters: 2443163

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_21.*
1: Geneseq1980s.*
2: Geneseq1990s.*
3: Geneseq2000s.*
4: Geneseq2001s.*
5: Geneseq2002s.*
6: Geneseq2003as.*
7: Geneseq2003bs.*
8: Geneseq2004s.*
9: Geneseq2005s.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	161	100.0	31	5	ABB83631
2	152	94.4	125	8	ADR87216
3	152	94.4	159	2	AAY45216
4	152	94.4	159	4	ABM00015
5	152	94.4	159	5	ABG66960
6	152	94.4	159	5	ABG66966
7	152	94.4	159	5	ABG66961
8	152	94.4	159	5	ABG66959
9	152	94.4	159	5	ABG66969
10	152	94.4	159	5	ABG67093
11	152	94.4	159	5	ABG66962
12	152	94.4	159	5	ABG67050
13	152	94.4	159	5	ABG66964
14	152	94.4	159	5	ABG66967
15	152	94.4	159	5	ABG67101
16	152	94.4	159	5	ABG67105
17	152	94.4	159	5	ABG66965
18	152	94.4	159	5	ABG67099
19	152	94.4	159	5	ABG67100
20	152	94.4	159	5	ABG66963
21	152	94.4	159	5	ABG66968
22	152	94.4	159	5	ABG67106
23	152	94.4	159	5	ABG67094
24	152	94.4	159	5	ABB84185

25	152	94.4	159	8	ADFS1233	Adf51233	Bet v 1 a
26	152	94.4	160	2	AAR04605	Aar04605	Major Bir
27	152	94.4	160	2	AAY25849	Aay25849	Betula sp
28	152	94.4	160	5	ABG66970	Abg66970	Birch alle
29	152	94.4	160	7	ADC34898	Adc34898	Tree alle
30	152	94.4	160	8	ADQ14386	Adq14386	Birch pol
31	152	94.4	160	8	ADR87218	Adr87218	Birch pol
32	152	94.4	160	8	ADS52093	Ads52093	Birch pol
33	152	94.4	160	8	ADS14364	Ads14364	Birch pol
34	152	94.4	172	8	ADM57312	Adm57312	Modular a
35	152	94.4	195	8	ADR87229	Adr87229	Chimeric
36	152	94.4	195	8	ADR87231	Adr87231	Chimeric
37	152	94.4	221	9	AEA81084	Aea81084	Grass/Bir
38	152	94.4	222	9	AEA81086	Aea81086	Grass/Bir
39	152	94.4	225	9	AEA81085	Aea81085	Birch/Gra
40	152	94.4	300	8	ADM57300	Adm57300	Modular a
41	149	92.5	160	2	AAR21796	Aar21796	Bet v 1 a
42	148	91.9	159	5	ABG66987	Abg66987	Birch all
43	148	91.9	159	5	ABG67095	Abg67095	Birch all
44	148	91.9	159	5	ABG66990	Abg66990	Birch all
45	147	91.3	159	5	ABG67097	Abg67097	Birch all

ALIGNMENTS

RESULT 1
ABB83631
ID ABB83631 standard; peptide; 31 AA.
XX
AC ABB83631;
XX
DT 10-OCT-2002 (first entry)
XX
DE Bet v 1-derived synthetic peptide #2.
XX
XW Non-allergenic; Bet v 1-derived peptide; allergy.
XX
OS Synthetic.
XX
PN EP1219299-A1.
XX
PD 03-JUL-2002.
XX
PF 28-DEC-2000; 2000EP-00128659.
XX
PR 28-DEC-2000; 2000EP-00128659.
XX
PA (SHAN-) SHAN BET-GES MBH.
XX
PI Focke M, Mahler V, Sperr WR, Valent P, Kraft D, Valenta R;
XX
WPI; 2002-559804/60.
XX
PT Allergy vaccines comprise a peptide containing 8 to 50 amino acids.
XX
PS Example 1; Page 6; 27pp; English.
XX
CC The present invention relates to a new composition containing
XX
CC anti-allergic peptides useful in the treatment of allergic diseases. The
XX
CC present peptide is an non-allergenic Bet v 1-derived synthetic peptide,
XX
CC which does not contain Bet v 1-specific T-cell epitopes
XX
SQ Sequence 31 AA;

Query Match 100.0%; Score 161; DB 5; Length 31;
Best Local Similarity 100.0%; Pred. No. 2.5e-16;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LFPKVAQAISVENIEGNGPGTIKKISFC 31
Db 1 LFPKVAQAISVENIEGNGPGTIKKISFC 31

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:43:45 ; Search time 15.9282 Seconds
(without alignments)
187.261 Million cell updates/sec

Title: US-10-026-911-2
Perfect score: 161
Sequence: 1 LFPKVAQAISSVENIEGNGPGTIKKISFC 31

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues
Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR 80.*
1: pir1.*
2: pir2.*
3: pir3.*
4: pir4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	152	94.4	160	2 E55699	major pollen aller
2	152	94.4	160	2 D55699	major pollen aller
3	152	94.4	160	2 G55699	major pollen aller
4	152	94.4	160	2 S05376	major pollen aller
5	143	88.8	160	2 F55699	major pollen aller
6	143	88.8	160	2 A57427	major pollen aller
7	143	88.8	160	2 H55699	major pollen aller
8	143	88.8	160	2 A55699	major pollen aller
9	143	88.8	160	2 B55699	major pollen aller
10	142	88.2	160	2 C55699	major pollen aller
11	142	88.2	160	2 I55699	major pollen aller
12	137	85.1	159	2 S47251	gene 1 Sc2 protein
13	134	83.2	160	2 S30055	major allergen Cor
14	134	83.2	160	2 S30053	major allergen Cor
15	134	83.2	160	2 S30054	major allergen Cor
16	133	82.6	160	2 S47250	gene 1-Sc1 protein
17	129	80.1	160	2 S47249	gene 1-Sc3 protein
18	127	78.9	160	2 S30056	major allergen Cor
19	119	73.9	153	2 S51119	MalD1 protein - ap
20	119	73.9	159	2 JC4276	major allergen Mal
21	115	71.4	156	1 SNFB1	pathogenesis-relat
22	110	68.3	160	2 T17007	major allergen Mal
23	110	68.3	160	2 T17005	major allergen Mal
24	108	67.1	159	2 T17004	major allergen Mal
25	106	65.8	160	2 T17006	major allergen Mal
26	103.5	64.3	155	2 T11670	pathogenesis relat
27	102.5	63.7	158	2 S20517	hypothetical prote
28	99.5	61.8	158	2 S20518	hypothetical prote
29	97	60.2	158	2 S12568	pathogenesis-relat

30 96.5 59.9 155 2 S52664 pathogenesis-relat
31 96.5 59.9 158 2 S47140 pathogenesis-relat
32 94.5 58.7 155 1 SNFB2 pathogenesis-relat
33 90.5 56.2 157 2 T09659 pathogenesis-relat
34 89.5 55.6 158 2 S42650 pathogenesis-relat
35 88.5 55.0 158 2 T06527 pathogenesis-relat
36 88.5 55.0 159 2 T08768 disease resistance
37 87.5 54.3 157 2 S42649 pathogenesis-relat
38 85.5 53.1 157 2 T09526 stress response ge
39 80 49.7 155 2 S04553 pathogenesis-relat
40 79 49.1 51 2 A45786 major pollen aller
41 79 49.1 155 2 S04552 pathogenesis-relat
42 78.5 48.8 154 2 S63984 major allergen Api
43 75 46.6 140 2 T10059 cytokeratin-induced
44 74 46.0 178 2 T07403 TSI-1 protein - to
45 72 44.7 155 2 T14918 pathogenesis-relat

ALIGNMENTS

RESULT 1

E55699
major pollen allergen Bet v 1f/i - European white birch
C/Species: Betula pendula (European white birch)
C/Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C/Accession: E55699; S41905; S41900
R/Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch. M.
J. Biol. Chem. 270, 2607-2613, 1995
A/Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom
A/Reference number: A55699; MUID:95155322; PMID:7852325
A/Accession: E55699
A/Molecule type: mRNA
A/Residues: 1-160 <SW2>
A/Cross-references: UNIPROT:P43179; UNIPARC:UPI000016DCF9; EMBL:X77268; NID:9452735; PI
A/Note: the source is designated as Betula verrucosa
R/Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffman-Sommergruber, K.; Heberle-
submitted to the EMBL Data Library, January 1994
A/Reference number: S41896
A/Accession: S41905
A/Status: preliminary
A/Molecule type: mRNA
A/Residues: 1-160 <SW2>
A/Cross-references: UNIPARC:UPI000016DCF9; EMBL:X77274; NID:9452745; PIDN:CAAS4490.1; P
A/Note: the source is designated as Betula verrucosa
C/Superfamily: pathogenesis-related protein
C/Keywords: pollen
F/2-160/Product: major pollen allergen Bet v 1f/i #status experimental <MAT>

Query Match 94.4%; Score 152; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 1.5e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LFPKVAQAISSVENIEGNGPGTIKKISF 30
|||||
Db 30 LFPKVAQAISSVENIEGNGPGTIKKISF 59

RESULT 2

G55699
major pollen allergen Bet v 1j - European white birch
C/Species: Betula pendula (European white birch)
C/Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C/Accession: G55699; S41902
R/Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch. M.
J. Biol. Chem. 270, 2607-2613, 1995
A/Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom
A/Reference number: A55699; MUID:95155322; PMID:7852325
A/Accession: G55699
A/Molecule type: mRNA
A/Residues: 1-160 <SWO>

A;Cross-references: UNIPROT:P43183; UNIPARC:UPI000016DCFB; EMBL:X77271; NID:g452739; PID
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1j #status experimental <MAT>

Query Match 94.4%; Score 152; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 1.5e-14; Mismatches 0; Indels 0; Gaps 0;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISSVENIEGNGGPGTIKKISF 30
|||||
Db 30 LFPKVAQAISSVENIEGNGGPGTIKKISF 59
|||||

RESULT 3
D55699
major pollen allergen Bet v 1e - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C;Accession: D55699; S41899
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch. M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322; PMID:7852325
A;Accession: D55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: UNIPROT:P43178; UNIPARC:UPI000016DCFB; EMBL:X77267; NID:g452733; PID
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1e #status experimental <MAT>

Query Match 94.4%; Score 152; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 1.5e-14; Mismatches 0; Indels 0; Gaps 0;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISSVENIEGNGGPGTIKKISF 30
|||||
Db 30 LFPKVAQAISSVENIEGNGGPGTIKKISF 59
|||||

RESULT 4
S05376
major pollen allergen Bet v 1 - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 31-Mar-1990 #sequence_revision 31-Mar-1990 #text_change 09-Jul-2004
C;Accession: S05376; J04834; B53288
R;Breiteneder, H.; Pottenburger, K.; Bito, A.; Valenta, R.; Kraft, D.; Rumpold, H.; Sche
EMBO J. 8, 1935-1938, 1989
A;Title: The gene coding for the major birch pollen allergen Betv1, is highly homologous
A;Reference number: S05376; MUID:90005395; PMID:2571499
A;Accession: S05376
A;Molecule type: mRNA
A;Residues: 1-160 <BRE>
A;Cross-references: UNIPROT:PI5494; UNIPARC:UPI0000000314; EMBL:X15877; NID:g17937; PIDN
R;Kungl, A.J.; Susani, M.; Lindemann, A.; Machius, M.; Visser, A.J.W.G.; Scheiner, O.; K
Biochem. Biophys. Res. Commun. 223, 187-192, 1996
A;Title: Evidence for an alpha helical T cell epitope in the C-terminus of the main birch
A;Reference number: J04834; MUID:96254050; PMID:8660368
A;Accession: J04834
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-160 <KUN>
A;Cross-references: UNIPARC:UPI0000000314
R;Ipsen, H.; Hansen, O.C.
Mol. Immunol. 28, 1279-1288, 1991
A;Title: The NH2-terminal amino acid sequence of the immunochemically partial identical
s) Car b I and oak (Quercus alba) Oue a I pollens.
A;Reference number: A53288; MUID:92072607; PMID:1961201
A;Accession: B53288

A;Status: preliminary
A;Molecule type: protein
A;Residues: 2-39, 'XX', 42-44 <IPS>
A;Cross-references: UNIPARC:UPI0000177F58; PID:g239734; PIDN:AAB20452.1
A;Experimental source: pollen
A;Note: sequence extracted from NCBI backbone (NCBIP:68408)
A;Note: the source is designated as Betula verrucosa
C;Comment: This protein induces IGE synthesis by B cells in a T cell dependent manner.
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1 #status experimental <MAT>

Query Match 94.4%; Score 152; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 1.5e-14; Mismatches 0; Indels 0; Gaps 0;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISSVENIEGNGGPGTIKKISF 30
|||||
Db 30 LFPKVAQAISSVENIEGNGGPGTIKKISF 59
|||||

RESULT 5
F55699
major pollen allergen Bet v 1g - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C;Accession: F55699; S41896
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch. M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom
A;Reference number: A55699; MUID:95155322; PMID:7852325
A;Accession: F55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: UNIPROT:P43180; UNIPARC:UPI000016DCFA; EMBL:X77269; NID:g452727; PI
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1g #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 88.8%; Score 143; DB 2; Length 160;
Best Local Similarity 93.3%; Pred. No. 3.1e-13; Mismatches 1; Indels 0; Gaps 0;
Matches 28; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 LFPKVAQAISSVENIEGNGGPGTIKKISF 30
|||||
Db 30 LIPKVAQAISSVENIEGNGGPGTIKKINF 59
|||||

RESULT 6
A57427
major pollen allergen Bet v 1m/n - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C;Accession: A57427; S49450
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch. M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom
A;Reference number: A55699; MUID:95155322; PMID:7852325
A;Accession: A57427
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: UNIPROT:P43186; UNIPARC:UPI000016DCFE; GB:X81972; NID:g807868; PIDN
R;Engel, E.; Kraft, D.; Scheiner, O.; Breitenbach, M.; Ferreira, F.
submitted to the EMBL Data Library, October 1994
A;Description: isoforms of BETv1, the major birch pollen allergen, analyzed by liquid c
A;Reference number: S49450
A;Accession: S49450
A;Status: preliminary
A;Molecule type: mRNA

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:43:29 ; Search time 52.2376 Seconds
(without alignments)
418.691 Million cell updates/sec

Title: US-10-026-911-2
Perfect score: 161
Sequence: 1 LFPKVAQAISSVENIEGNGPGTIKKISFC 31

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2166443 seqs, 70528306 residues

Total number of hits satisfying chosen parameters: 2166443

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Uniprot_05.80.*

1: uniprot_sprot.*

2: uniprot_trembl.*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	152	94.4	120	2	Q9SCH7_BETVE
2	152	94.4	120	2	Q9SCI1_BETVE
3	152	94.4	159	1	BEVIA_BETVE
4	152	94.4	159	1	BEVIC_BETVE
5	152	94.4	159	1	BEVIF_BETVE
6	152	94.4	159	1	BEVIJ_BETVE
7	152	94.4	159	2	Q23748_BETVE
8	152	94.4	159	2	Q23750_BETVE
9	152	94.4	159	2	Q546V0_BETVE
10	152	94.4	160	2	Q39431_BETVE
11	152	94.4	160	2	Q9SYW1_BETVE
12	152	94.4	160	2	Q24642_BETVE
13	152	94.4	160	2	Q42499_BETVE
14	152	94.4	160	2	Q23754_BETVE
15	152	94.4	160	2	Q39426_BETVE
16	152	94.4	160	2	Q39430_BETVE
17	152	94.4	160	2	Q546U3_BETVE
18	152	94.4	160	2	Q96365_BETVE
19	152	94.4	160	2	Q96366_BETVE
20	152	94.4	160	2	Q96367_BETVE
21	152	94.4	160	2	Q96368_BETVE
22	152	94.4	160	2	Q96371_BETVE
23	152	94.4	160	2	Q9AYS2_9ROSI
24	152	94.4	160	2	Q9AYS3_9ROSI
25	152	94.4	160	2	Q9SCH8_BETVE
26	152	94.4	160	2	Q9SCI0_BETVE
27	152	94.4	160	2	Q9SCI3_BETVE
28	152	94.4	160	2	Q9SYW0_BETVE
29	152	94.4	160	2	Q9SYW2_BETVE
30	152	94.4	160	2	Q9Z839_BETVE
31	149	92.5	160	2	Q9SCH9_BETVE

32	146	90.7	160	2	Q9SCH6_BETVE	Q9sch6 betula verr
33	145	90.1	160	2	O23752_BETVE	O23752 betula verr
34	145	90.1	160	2	Q96370_BETVE	Q96370 betula verr
35	143	88.8	159	1	BEVIB_BETVE	P45431 betula verr
36	143	88.8	159	1	BEVIC_BETVE	P43176 betula verr
37	143	88.8	159	1	BEVIG_BETVE	P43180 betula verr
38	143	88.8	159	1	BEVIK_BETVE	P43184 betula verr
39	143	88.8	159	1	BEVIM_BETVE	P43186 betula verr
40	143	88.8	159	2	O23747_BETVE	O23747 betula verr
41	143	88.8	159	2	O23749_BETVE	O23749 betula verr
42	143	88.8	160	2	Q39427_BETVE	Q39427 betula verr
43	143	88.8	160	2	Q39428_BETVE	Q39428 betula verr
44	143	88.8	160	2	Q39429_BETVE	Q39429 betula verr
45	143	88.8	160	2	Q9SCH5_BETVE	Q9sch5 betula verr

ALIGNMENTS

RESULT 1
Q9SCH7_BETVE
ID Q9SCH7_BETVE PRELIMINARY; PRT; 120 AA.
AC Q9SCH7;
DT 01-MAY-2000 (TREMblrel. 13, Created)
DT 01-MAY-2000 (TREMblrel. 13, Last sequence update)
DT 01-JUN-2003 (TREMblrel. 24, Last annotation update)
DE Pollen allergen Betv1, isoform at87.
GN Name=betv1;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
OC eurosids I; Fagales; Betulaceae; Betula.
ON NCBI_TaxID=3505;
RX MEDLINE=99437514; PubMed=10509815; DOI=10.1016/S0161-5890(99)00078-4;
RA Friedl-Hajek R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
Leberl K., Scheiner O., Breiteneder H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
of the protein derived from Austrian birch pollen."
RL Mol. Immunol. 36:639-645(1999).
DR EMBL; AJ006913; CAA07328.1; -; mRNA.
DR HSSP; P15494; 1B6F.
DR SMR; Q9SCH7; 2-119.
DR InterPro; IPR000916; Bet_v.I.
DR Pfam; PF00407; Bet_v.I; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PRODOM; PD000531; Bet_v.I; 1.
SQ SEQUENCE 120 AA; 13073 MW; 95EB4309C08B08BF CRC64;

Query Match 94.4%; Score 152; DB 2; Length 120;
Best Local Similarity 100.0%; Pred. No. 5,7e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISSVENIEGNGPGTIKKISF 30
|||||
DB 30 LFPKVAQAISSVENIEGNGPGTIKKISF 59
|||||

RESULT 2
Q9SCI1_BETVE
ID Q9SCI1_BETVE PRELIMINARY; PRT; 120 AA.
AC Q9SCI1;
DT 01-MAY-2000 (TREMblrel. 13, Created)
DT 01-MAY-2000 (TREMblrel. 13, Last sequence update)
DT 01-JUN-2003 (TREMblrel. 24, Last annotation update)
DE Pollen allergen Betv1, isoform at14.
GN Name=betv1;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
OC eurosids I; Fagales; Betulaceae; Betula.

```

OX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pollen;
RX MEDLINE=99437514; PubMed=10509815; DOI=10.1016/S0161-5890(99)00078-4;
RA Friedl-Hajek R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
RA Leberl K., Scheiner O., Breitenbacher H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
RT of the protein derived from Austrian birch pollen.";
RL Mol. Immunol. 36:639-645(1999).
DR EMBL: AJ006905; CA07320.1; -; mRNA.
DR HSSP: P15494; I86F.
DR SMR; Q9SC11; 2-119.
DR InterPro; IPR000916; Bet_v_I.
DR Pfam; PF00407; Bet_v_I; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR ProDom; PD000531; Bet_v_I; 1.
SQ SEQUENCE 120 AA; 13055 MW; 95EB4309C4CB4CBF CRC64;

Query Match 94.4%; Score 152; DB 2; Length 120;
Best Local Similarity 100.0%; Pred. NO. 5.7e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISSVENIEGNGGPGTIKKISF 30
DB 30 LFPKVAQAISSVENIEGNGGPGTIKKISF 59

RESULT 3
BEVIA BETVE
ID BEVIA BETVE STANDARD; PRT; 159 AA.
AC P15494; Q96369;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 10-MAY-2005 (Rel. 47, Last annotation update)
DE Major pollen allergen Bet v 1-A (Bet v I-A).
GN Name=BETVIA; Synonyms=BETVI;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
OC rosids; eurosids I; Fagales; Betulaceae; Betula.
OX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE, AND PROTEIN SEQUENCE OF 1-34.
RC TISSUE=Pollen;
RX MEDLINE=90005395; PubMed=2571499;
RA Breitenbacher H., Pottenburger K., Bito A., Valenta R., Kraft D.,
RA Rumpold H., Scheiner O., Breitenbacher M.;
RT "The gene coding for the major birch pollen allergen Betv1, is highly
RT homologous to a pea disease resistance response gene.";
RL EMBO J. 8:1935-1938(1989).
RN [2]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pollen;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DBJ databases.
RN [3]
RP PROTEIN SEQUENCE.
RC TISSUE=Pollen;
RX MEDLINE=95155322; PubMed=7852325; DOI=10.1074/jbc.270.6.2607;
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breitenbacher H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbacher M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
RN [4]
RP PARTIAL PROTEIN SEQUENCE.
RX MEDLINE=91317572; PubMed=2101127;
RA Elsayed S., Vik H.;
RT "Purification and N-terminal amino acid sequence of two birch pollen
RT isoallergens (Bet v I and Bet v II).";
RL Int. Arch. Allergy Appl. Immunol. 93:378-384(1990).

```

```

[5]
RN X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS), AND STRUCTURE BY NMR.
RX MEDLINE=97102431; PubMed=8946858;
RA Gajhede M., Omark P., Poulsen F.M., Ipsen H., Larsen J.N.,
RA van Neerven R.J.J., Schou C., Loewenstein H., Spangfort M.D.;
RT "X-ray and NMR structure of Bet v 1, the origin of birch pollen
RT allergy.";
RL Nat. Struct. Biol. 3:1040-1045(1996).
CC -!- SUBCELLULAR LOCATION: Cytoplasmic.
CC -!- ALLERGEN: Causes an allergic reaction in human. Is a cause of type
CC I allergic reactions in Europe, North America and USSR.
CC -!- SIMILARITY: Belongs to the Betv1 family.
CC This Swiss-Prot entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use as long as its content is in no way modified and this statement is not
CC removed.
CC -----
DR EMBL; X15877; CA033887.1; -; mRNA.
DR EMBL; Z80098; CAB02153.1; -; mRNA.
DR EMBL; Z80099; CAB02154.1; -; mRNA.
DR EMBL; Z80104; CAB02159.1; -; mRNA.
DR PIR; S05376; S05376.
DR PDB; 1B6F; NMR; A=1-159.
DR PDB; 1BTV; NMR; @=1-159.
DR PDB; 1BV1; X-ray; @=1-159.
DR PDB; 1FSK; X-ray; A/D/G/J=1-159.
DR PDB; 1LLT; X-ray; A=1-159.
DR PDB; 1QMR; X-ray; A=1-159.
DR InterPro; IPR000916; Bet_v_I.
DR Pfam; PF00407; Bet_v_I; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR ProDom; PD000531; Bet_v_I; 1.
DR PROSITE; PS00451; PATHOGENESIS BETV1; 1.
KW 3D-structure; Allergen; Direct protein sequencing; Multigene family;
KW Pathogenesis-related protein; Plant defense.
FT INIT MET 0 0
FT VARIANT 62 62 F -> L.
FT STRAND 2 11
FT HELIX 15 22
FT TURN 23 25
FT HELIX 26 33
FT TURN 35 37
FT STRAND 40 45
FT TURN 50 51
FT STRAND 53 57
FT TURN 60 61
FT STRAND 66 75
FT TURN 76 79
FT STRAND 80 88
FT TURN 89 90
FT STRAND 92 92
FT TURN 93 94
FT STRAND 95 106
FT TURN 108 109
FT STRAND 112 122
FT TURN 124 125
FT HELIX 130 153
FT TURN 155 159
SQ SEQUENCE 159 AA; 17440 MW; 96E181194BBA83E6 CRC64;

Query Match 94.4%; Score 152; DB 1; Length 159;
Best Local Similarity 100.0%; Pred. NO. 7.7e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISSVENIEGNGGPGTIKKISF 30
DB 29 LFPKVAQAISSVENIEGNGGPGTIKKISF 58

RESULT 4
BEVIE BETVE

```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:44:15 ; Search time 24.4917 Seconds
(without alignments)
104.645 Million cell updates/sec

Title: US-10-026-911-2

Perfect score: 161

Sequence: 1 LFPKVAQAISSVENIEGNGRGRTIKKISFC 31

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 572060 seqs, 82675679 residues

Total number of hits satisfying chosen parameters: 572060

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Issued Patents AA:*
1: /cgn2_6/ptodata/1/iaa/5 COMB.pep.*
2: /cgn2_6/ptodata/1/iaa/6 COMB.pep.*
3: /cgn2_6/ptodata/1/iaa/H COMB.pep.*
4: /cgn2_6/ptodata/1/iaa/PCTUS COMB.pep.*
5: /cgn2_6/ptodata/1/iaa/RE COMB.pep.*
6: /cgn2_6/ptodata/1/iaa/backfile1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	152	94.4	160	1	US-07-847-010-23
2	139	86.3	160	1	US-07-847-010-3
3	134	83.2	160	1	US-07-847-010-11
4	134	83.2	160	1	US-07-847-010-14
5	134	83.2	160	1	US-07-847-010-17
6	127	78.9	160	1	US-07-847-010-20
7	100.5	62.4	158	2	US-08-964-722-2
8	96.5	59.9	158	6	5312912-2
9	79	49.1	161	2	US-08-955-629C-2
10	74	46.0	160	2	US-09-257-583-11
11	70.5	43.8	154	2	US-09-945-376-2
12	64.5	40.1	152	2	US-09-598-401C-64
13	64.5	40.1	154	1	US-08-363-010-1
14	64.5	40.1	154	1	US-08-911-434A-4
15	56	34.8	158	2	US-08-199-219-6
16	53	32.9	322	2	US-09-640-211A-784
17	52.5	32.6	420	2	US-09-329-418-8
18	52.5	32.6	420	2	US-09-531-914-8
19	52.5	32.6	518	2	US-09-329-418-3
20	52.5	32.6	518	2	US-09-329-418-4
21	52.5	32.6	518	2	US-09-329-418-5
22	52.5	32.6	518	2	US-09-329-418-9
23	52.5	32.6	518	2	US-09-531-914-3
24	52.5	32.6	518	2	US-09-531-914-4
25	52.5	32.6	518	2	US-09-531-914-5
26	52.5	32.6	518	2	US-09-531-914-9
27	52.5	32.6	555	2	US-09-949-016-10660

28	52	32.3	452	1	US-08-290-978A-5
29	52	32.3	452	1	US-08-780-869-5
30	51.5	32.0	117	2	US-09-673-395A-230
31	50	31.1	169	2	US-09-248-796A-23427
32	50	31.1	484	2	US-09-242-913B-17
33	48.5	30.1	1837	2	US-09-438-185A-98
34	48	29.8	66	2	US-09-248-796A-28075
35	48	29.8	145	2	US-08-311-731A-51
36	48	29.8	188	2	US-09-252-991A-16727
37	48	29.8	413	1	US-08-481-814A-8
38	48	29.8	413	2	US-08-836-582-2
39	48	29.8	413	2	US-09-265-566-2
40	48	29.8	413	2	US-09-242-737-4
41	48	29.8	435	2	US-09-949-016-9671
42	47.5	29.5	212	1	US-08-461-859-35
43	47.5	29.5	212	2	US-09-917-254-62
44	47.5	29.5	420	2	US-09-270-767-37925
45	47.5	29.5	420	2	US-09-270-767-53142

ALIGNMENTS

RESULT 1

US-07-847-010-23
; Sequence 23, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 23:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:

Sequence 5, Appli
Sequence 5, Appli
Sequence 230, App
Sequence 23427, A
Sequence 17, Appl
Sequence 98, Appl
Sequence 28075, A
Sequence 51, Appl
Sequence 16727, A
Sequence 8, Appli
Sequence 2, Appli
Sequence 4, Appli
Sequence 9671, Ap
Sequence 35, Appl
Sequence 62, Appl
Sequence 37925, A
Sequence 53142, A

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 10:01:54 ; Search time 37.8508 Seconds
(without alignments)
342.204 Million cell updates/sec

Title: US-10-026-911-2

Perfect score: 161

Sequence: 1 LPPKVAPOAISSVENIEGNGPGTIKKISFC 31

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1867569 seqs, 417829326 residues

Total number of hits satisfying chosen parameters: 1867569

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Published Applications AA Main:*

1: /cgn2_6/prodata/i/pubpaa/US07_PUBCOMB.pgp:*

2: /cgn2_6/prodata/i/pubpaa/US08_PUBCOMB.pgp:*

3: /cgn2_6/prodata/i/pubpaa/US09_PUBCOMB.pgp:*

4: /cgn2_6/prodata/i/pubpaa/US10_PUBCOMB.pgp:*

5: /cgn2_6/prodata/i/pubpaa/US10B_PUBCOMB.pgp:*

6: /cgn2_6/prodata/i/pubpaa/US11_PUBCOMB.pgp:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	161	100.0	31	4	US-10-026-911-2
2	152	94.4	125	5	US-10-799-514-5
3	152	94.4	159	3	US-09-981-009B-1
4	152	94.4	159	3	US-09-847-208-34
5	152	94.4	159	3	US-09-847-208-37
6	152	94.4	159	3	US-09-847-208-38
7	152	94.4	159	3	US-09-847-208-40
8	152	94.4	159	3	US-09-957-806A-6
9	152	94.4	159	4	US-10-001-245-92
10	152	94.4	159	4	US-10-719-553-37
11	152	94.4	159	4	US-10-698-855-5
12	152	94.4	160	4	US-10-440-516-1
13	152	94.4	160	4	US-10-440-516-2
14	152	94.4	160	5	US-10-799-514-7
15	152	94.4	160	5	US-10-809-689-87
16	152	94.4	195	5	US-10-799-514-18
17	152	94.4	195	5	US-10-799-514-20
18	148	91.9	159	4	US-10-001-245-5
19	148	91.9	159	4	US-10-001-245-9
20	148	91.9	160	4	US-10-001-245-1
21	148	91.9	160	4	US-10-001-245-6
22	147	91.3	159	4	US-10-001-245-4
23	147	91.3	160	4	US-10-440-516-3
24	147	91.3	160	4	US-10-440-516-8
25	143	88.8	159	3	US-09-847-208-35
26	143	88.8	159	3	US-09-847-208-39
27	143	88.8	159	3	US-09-847-208-41

28 143 88.8 159 3 US-09-847-208-43 Sequence 43, Appl
29 143 88.8 159 4 US-10-001-245-3 Sequence 3, Appl
30 143 88.8 159 4 US-10-440-516-47 Sequence 47, Appl
31 143 88.8 160 4 US-10-001-245-7 Sequence 7, Appl
32 143 88.8 160 4 US-10-440-516-4 Sequence 4, Appl
33 143 88.8 160 4 US-10-440-516-5 Sequence 5, Appl
34 143 88.8 160 4 US-10-440-516-6 Sequence 6, Appl
35 143 88.8 160 4 US-10-440-516-7 Sequence 7, Appl
36 143 88.8 161 4 US-10-440-516-43 Sequence 43, Appl
37 143 88.8 161 4 US-10-440-516-44 Sequence 44, Appl
38 143 88.8 161 4 US-10-440-516-45 Sequence 45, Appl
39 142 88.2 159 3 US-09-847-208-36 Sequence 36, Appl
40 142 88.2 159 3 US-09-847-208-42 Sequence 42, Appl
41 142 88.2 159 4 US-10-001-245-2 Sequence 2, Appl
42 142 88.2 160 4 US-10-001-245-8 Sequence 8, Appl
43 142 88.2 160 4 US-10-001-245-11 Sequence 11, Appl
44 139 86.3 159 3 US-09-847-208-8 Sequence 8, Appl
45 138 85.7 159 3 US-09-847-208-57 Sequence 57, Appl

ALIGNMENTS

RESULT 1
US-10-026-911-2
; Sequence 2, Application US/10026911
; Publication No. US20030078201A1
; GENERAL INFORMATION:
; APPLICANT: Focke, Margarete
; APPLICANT: Mahler, Vera
; APPLICANT: Sperr, Wolfgang R.
; APPLICANT: Valent, Peter
; APPLICANT: Kraft, Dietrich
; APPLICANT: Valenta, Rudolf
; TITLE OF INVENTION: Allergy Vaccines and Their Preparation
; FILE REFERENCE: 0273-0005
; CURRENT APPLICATION NUMBER: US/10/026,911
; CURRENT FILING DATE: 2002-07-24
; NUMBER OF SEQ ID NOS: 6
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 2
; LENGTH: 31
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:
; OTHER INFORMATION: solvent-exposed peptide
US-10-026-911-2

Query Match 100.0%; Score 161; DB 4; Length 31;
Best Local Similarity 100.0%; Pred. No. 7.3e-16;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LPPKVAPOAISSVENIEGNGPGTIKKISFC 31
Db 1 LPPKVAPOAISSVENIEGNGPGTIKKISFC 31

RESULT 2
US-10-799-514-5
; Sequence 5, Application US/10799514
; Publication No. US20040241178A1
; GENERAL INFORMATION:
; APPLICANT: Spertini, Francois
; APPLICANT: Cortesv, Blaise
; TITLE OF INVENTION: Allergen Peptide Fragments and Use Thereof
; FILE REFERENCE: 25720-502
; CURRENT APPLICATION NUMBER: US/10/799,514
; CURRENT FILING DATE: 2004-03-12
; PRIOR APPLICATION NUMBER: 60/455,004
; PRIOR FILING DATE: 2003-03-14
; NUMBER OF SEQ ID NOS: 23
; SOFTWARE: PatentIn Ver. 2.1

```
; SEQ ID NO 5
; LENGTH: 125
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
; OTHER INFORMATION: Peptide
US-10-799-514-5

Query Match          94.4%; Score 152; DB 5; Length 125;
Best Local Similarity 100.0%; Pred. No. 7.6e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISVENIEGNGGPGTIKKISF 30
|||||
DB 30 LFPKVAQAISVENIEGNGGPGTIKKISF 59

RESULT 3
US-09-981-009B-1
; Sequence 1, Application US/09981009B
; Publication No. US20030041354A1
; GENERAL INFORMATION:
; APPLICANT: Kjaerulff, Soren
; APPLICANT: Roggen, Erwin
; TITLE OF INVENTION: Transgenic Plants
; FILE REFERENCE: 10082.200-US
; CURRENT APPLICATION NUMBER: US/09/981,009B
; CURRENT FILING DATE: 2002-06-14
; NUMBER OF SEQ ID NOS: 5
; SOFTWARE: Patentin version 3.1
; SEQ ID NO 1
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula pendula
US-09-981-009B-1

Query Match          94.4%; Score 152; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 1e-13;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISVENIEGNGGPGTIKKISF 30
|||||
DB 29 LFPKVAQAISVENIEGNGGPGTIKKISF 58

RESULT 4
US-09-847-208-34
; Sequence 34, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
; APPLICANT: Zhu, Daocheng
; TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
; TITLE OF INVENTION: IGE-MEDIATED ALLERGIC DISEASES
; FILE REFERENCE: UC67.002A
; CURRENT APPLICATION NUMBER: US/09/847,208
; CURRENT FILING DATE: 2001-05-01
; NUMBER OF SEQ ID NOS: 177
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 34
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa (White birch) (Betula pendula)
US-09-847-208-34

Query Match          94.4%; Score 152; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 1e-13;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISVENIEGNGGPGTIKKISF 30
|||||
DB 29 LFPKVAQAISVENIEGNGGPGTIKKISF 58

RESULT 5
US-09-847-208-37
; Sequence 37, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
; APPLICANT: Zhu, Daocheng
; TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
; TITLE OF INVENTION: IGE-MEDIATED ALLERGIC DISEASES
; FILE REFERENCE: UC67.002A
; CURRENT APPLICATION NUMBER: US/09/847,208
; CURRENT FILING DATE: 2001-05-01
; NUMBER OF SEQ ID NOS: 177
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 37
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa (White birch) (Betula pendula)
US-09-847-208-37

Query Match          94.4%; Score 152; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 1e-13;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISVENIEGNGGPGTIKKISF 30
|||||
DB 29 LFPKVAQAISVENIEGNGGPGTIKKISF 58

RESULT 6
US-09-847-208-38
; Sequence 38, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
; APPLICANT: Zhu, Daocheng
; TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
; TITLE OF INVENTION: IGE-MEDIATED ALLERGIC DISEASES
; FILE REFERENCE: UC67.002A
; CURRENT APPLICATION NUMBER: US/09/847,208
; CURRENT FILING DATE: 2001-05-01
; NUMBER OF SEQ ID NOS: 177
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 38
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa (White birch) (Betula pendula)
US-09-847-208-38

Query Match          94.4%; Score 152; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 1e-13;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISVENIEGNGGPGTIKKISF 30
|||||
DB 29 LFPKVAQAISVENIEGNGGPGTIKKISF 58

RESULT 7
US-09-847-208-40
; Sequence 40, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
; APPLICANT: Zhu, Daocheng
; TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
; TITLE OF INVENTION: IGE-MEDIATED ALLERGIC DISEASES
; FILE REFERENCE: UC67.002A
; CURRENT APPLICATION NUMBER: US/09/847,208
; CURRENT FILING DATE: 2001-05-01
; NUMBER OF SEQ ID NOS: 177
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 40
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa (White birch) (Betula pendula)
US-09-847-208-40

Query Match          94.4%; Score 152; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 1e-13;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISVENIEGNGGPGTIKKISF 30
|||||
DB 29 LFPKVAQAISVENIEGNGGPGTIKKISF 58
```

```
DB 29 LFPKVAQAISVENIEGNGGPGTIKKISF 58

RESULT 5
US-09-847-208-37
; Sequence 37, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
; APPLICANT: Zhu, Daocheng
; TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
; TITLE OF INVENTION: IGE-MEDIATED ALLERGIC DISEASES
; FILE REFERENCE: UC67.002A
; CURRENT APPLICATION NUMBER: US/09/847,208
; CURRENT FILING DATE: 2001-05-01
; NUMBER OF SEQ ID NOS: 177
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 37
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa (White birch) (Betula pendula)
US-09-847-208-37

Query Match          94.4%; Score 152; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 1e-13;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISVENIEGNGGPGTIKKISF 30
|||||
DB 29 LFPKVAQAISVENIEGNGGPGTIKKISF 58

RESULT 6
US-09-847-208-38
; Sequence 38, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
; APPLICANT: Zhu, Daocheng
; TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
; TITLE OF INVENTION: IGE-MEDIATED ALLERGIC DISEASES
; FILE REFERENCE: UC67.002A
; CURRENT APPLICATION NUMBER: US/09/847,208
; CURRENT FILING DATE: 2001-05-01
; NUMBER OF SEQ ID NOS: 177
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 38
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa (White birch) (Betula pendula)
US-09-847-208-38

Query Match          94.4%; Score 152; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 1e-13;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISVENIEGNGGPGTIKKISF 30
|||||
DB 29 LFPKVAQAISVENIEGNGGPGTIKKISF 58

RESULT 7
US-09-847-208-40
; Sequence 40, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
; APPLICANT: Zhu, Daocheng
; TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
; TITLE OF INVENTION: IGE-MEDIATED ALLERGIC DISEASES
; FILE REFERENCE: UC67.002A
; CURRENT APPLICATION NUMBER: US/09/847,208
; CURRENT FILING DATE: 2001-05-01
; NUMBER OF SEQ ID NOS: 177
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 40
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa (White birch) (Betula pendula)
US-09-847-208-40

Query Match          94.4%; Score 152; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 1e-13;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LFPKVAQAISVENIEGNGGPGTIKKISF 30
|||||
DB 29 LFPKVAQAISVENIEGNGGPGTIKKISF 58
```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 10:05:54 ; Search time 6.85083 Seconds
(without alignments)
192.264 Million cell updates/sec

Title: US-10-026-911-2

Perfect score: 161

Sequence: 1 LPPKVAPOAISSVENIEGNGGPTIKKISFC 31

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 217505 seqs, 42489236 residues

Total number of hits satisfying chosen parameters: 217505

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Listing first 45 summaries

Database :

Published Applications AA New:*
1: /SIDSS/ptodata/1/pubpaa/US08_NEW_PUB.pep.*
2: /SIDSS/ptodata/1/pubpaa/US06_NEW_PUB.pep.*
3: /SIDSS/ptodata/1/pubpaa/US07_NEW_PUB.pep.*
4: /SIDSS/ptodata/1/pubpaa/PCT_NEW_PUB.pep.*
5: /SIDSS/ptodata/1/pubpaa/US05_NEW_PUB.pep.*
6: /SIDSS/ptodata/1/pubpaa/US10_NEW_PUB.pep.*
7: /SIDSS/ptodata/1/pubpaa/US11_NEW_PUB.pep.*
8: /SIDSS/ptodata/1/pubpaa/US60_NEW_PUB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
1	152	94.4	160	6	US-10-498-026-81
2	152	94.4	172	7	US-11-102-883-18
3	152	94.4	289	7	US-11-102-883-26
4	152	94.4	300	7	US-11-102-883-6
5	83	51.6	161	7	US-11-172-740-185
6	79	49.1	161	7	US-11-172-740-184
7	79	49.1	161	7	US-11-172-740-187
8	78.5	48.8	283	7	US-11-102-883-32
9	78.5	48.8	224	7	US-11-102-883-30
10	75	46.6	161	7	US-11-172-740-186
11	73	45.3	162	7	US-11-096-568A-19923
12	68	42.2	82	7	US-11-096-568A-21469
13	67	41.6	44	6	US-10-498-026-87
14	65	40.4	161	7	US-11-096-568A-10124
15	65	40.4	183	7	US-11-096-568A-10123
16	65	40.4	186	7	US-11-096-568A-10122
17	64.5	40.1	152	6	US-10-927-641-64
18	50	31.1	537	7	US-11-188-298-9995
19	48.5	30.1	99	7	US-11-079-463-7832
20	48	29.8	131	7	US-11-172-740-1180
21	48	29.8	413	6	US-10-967-648A-8
22	47.5	29.5	413	7	US-11-079-463-8119
23	47.5	29.5	1011	7	US-11-188-298-8943
24	47.5	29.5	1065	7	US-11-188-298-8767
25	47	29.2	131	7	US-11-172-740-1177

26	47	29.2	312	6	US-10-511-989-184	Sequence 184, App
27	47	29.2	408	6	US-10-492-570-3	Sequence 3, Appli
28	47	29.2	427	7	US-11-087-099-8459	Sequence 8459, Ap
29	47	29.2	510	7	US-11-072-512-3594	Sequence 3594, Ap
30	47	29.2	782	7	US-11-145-631-9	Sequence 9, Appli
31	47	29.2	1295	7	US-11-091-928-2	Sequence 2, Appli
32	47	29.2	1403	7	US-11-091-928-1	Sequence 1, Appli
33	46.5	28.9	1381	7	US-11-052-554A-138	Sequence 138, App
34	46	28.6	153	7	US-11-087-099-8705	Sequence 8705, Ap
35	46	28.6	218	7	US-11-072-512-2070	Sequence 2070, Ap
36	46	28.6	248	7	US-11-087-099-5158	Sequence 5158, Ap
37	46	28.6	249	7	US-11-087-099-1726	Sequence 1726, Ap
38	46	28.6	723	6	US-10-131-826A-346	Sequence 346, App
39	46	28.6	723	6	US-10-973-115B-346	Sequence 346, App
40	46	28.6	723	7	US-11-078-735-17	Sequence 17, Appl
41	46	28.6	723	7	US-11-103-077-17	Sequence 62, Appl
42	46	28.6	723	7	US-11-050-346-62	Sequence 17, Appl
43	46	28.6	723	7	US-11-290-153-346	Sequence 346, App
44	45.5	28.3	454	7	US-11-169-013-1	Sequence 1, Appli
45	45.5	28.3	758	7	US-11-188-298-14671	Sequence 14671, A

ALIGNMENTS

RESULT 1
US-10-498-026-81
; Sequence 81, Application US/10498026
; Publication No. US20060024334A1
; GENERAL INFORMATION:
; APPLICANT: CIRCASSIA LIMITED
; TITLE OF INVENTION: IMMUNOTHERAPEUTIC METHODS AND SYSTEMS
; FILE REFERENCE: N.87430 WO GCW
; CURRENT APPLICATION NUMBER: US/10/498,026
; CURRENT FILING DATE: 2004-06-04
; NUMBER OF SEQ ID NOS: 118
; SOFTWARE: Patent in version 3.1
; SEQ ID NO 81
; LENGTH: 160
; TYPE: PRT
; ORGANISM: Betula pendula
US-10-498-026-81

Query Match 94.4%; Score 152; DB 6; Length 160;
Best Local Similarity 100.0%; Pred. No. 4.9e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LPPKVAPOAISSVENIEGNGGPTIKKISF 30
DB 30 LPPKVAPOAISSVENIEGNGGPTIKKISF 59

RESULT 2
US-11-102-883-18
; Sequence 18, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lampung, Norbert
; APPLICANT: Cràmeri, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAR Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods an
; FILE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: Patent in version 3.2

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:42:18 ; Search time 46.9282 Seconds
(without alignments)
290.247 Million cell updates/sec

Title: US-10-026-911-3
Perfect score: 174
Sequence: 1 CGPGTIKKISFPEGFPFKYVKDRVDEVDHTN 31

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2443163 seqs, 439378781 residues

Total number of hits satisfying chosen parameters: 2443163

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A Geneseq_21.*
1: Geneseqp1980s.*
2: Geneseqp1990s.*
3: Geneseqp2000s.*
4: Geneseqp2001s.*
5: Geneseqp2002s.*
6: Geneseqp2003as.*
7: Geneseqp2003bs.*
8: Geneseqp2004s.*
9: Geneseqp2005s.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	174	100.0	31	5	ABB83632 Bet v 1-d
2	165	94.8	125	8	ADR87216 Birch pol
3	165	94.8	159	4	ABM00015 Major pol
4	165	94.8	159	5	ABM00015 Major pol
5	165	94.8	160	2	AAR04605 Aar04605 Major Bir
6	165	94.8	160	2	AAR21796 Bet v 1 a
7	165	94.8	160	7	ADC34898 Tree alle
8	165	94.8	160	8	ADF51168 Bet v 1 a
9	165	94.8	160	8	ADQ14386 Birch pol
10	165	94.8	160	8	ADR87218 Birch pol
11	165	94.8	160	8	ADS52093 Birch pol
12	165	94.8	160	8	ADS14364 Birch pol
13	165	94.8	172	8	ADM57312 Modular a
14	165	94.8	195	8	ADR87229 Chimeric
15	165	94.8	195	8	ADR87231 Chimeric
16	165	94.8	221	9	AEA81084 Grass/Bir
17	165	94.8	222	9	AEA81086 Grass/Bir
18	165	94.8	225	9	AEA81085 Birch/Gra
19	165	94.8	300	8	ADM57300 Modular a
20	160	92.0	160	8	ADF51170 Bet v 1 a
21	159	91.4	159	2	AAI45216 Wild type
22	159	91.4	159	5	ABG66966 Birch all
23	159	91.4	159	5	ABG67097 Birch all
24	159	91.4	159	5	ABG66961 Birch all

25 159 91.4 159 5 ABG66969 Abg66969 Birch all
26 159 91.4 159 5 ABG67096 Abg67096 Birch all
27 159 91.4 159 5 ABG67093 Abg67093 Birch all
28 159 91.4 159 5 ABG66962 Abg66962 Birch all
29 159 91.4 159 5 ABG67050 Abg67050 Birch all
30 159 91.4 159 5 ABG66964 Abg66964 Birch all
31 159 91.4 159 5 ABG66967 Abg66967 Birch all
32 159 91.4 159 5 ABG66987 Abg66987 Birch all
33 159 91.4 159 5 ABG67102 Abg67102 Birch all
34 159 91.4 159 5 ABG66958 Abg66958 Birch all
35 159 91.4 159 5 ABG67095 Abg67095 Birch all
36 159 91.4 159 5 ABG67101 Abg67101 Birch all
37 159 91.4 159 5 ABG67105 Abg67105 Birch all
38 159 91.4 159 5 ABG66965 Abg66965 Birch all
39 159 91.4 159 5 ABG66963 Abg66963 Birch all
40 159 91.4 159 5 ABG66968 Abg66968 Birch all
41 159 91.4 159 5 ABG67106 Abg67106 Birch all
42 159 91.4 159 5 ABG67094 Abg67094 Birch all
43 159 91.4 159 8 ADF51209 Adf51209 Bet v 1 a
44 159 91.4 159 8 ADF51233 Adf51233 Bet v 1 a
45 159 91.4 160 5 ABG66970 Abg66970 Birch all

ALIGNMENTS

RESULT 1

ABB83632
ID ABB83632 standard; peptide; 31 AA.
XX
AC ABB83632;
XX
DT 10-OCT-2002 (first entry)
XX
DE Bet v 1-derived synthetic peptide #3.
XX
KW Non-allergenic; Bet v 1-derived peptide; allergy.
XX
OS Synthetic.
XX
PN EP1219299-A1.
XX
PD 03-JUL-2002.
XX
PF 28-DEC-2000; 2000EP-00128659.
XX
PR 28-DEC-2000; 2000EP-00128659.
XX
PA (SHAN-) SHAN BET-GES MBH.
XX
PI Focke M, Mahler V, Sperr WR, Valent P, Kraft D, Valenta R;
XX
DR WPI; 2002-559804/60.
XX
PT Allergy vaccines comprise a peptide containing 8 to 50 amino acids.
XX
PS Example 1; Page 6; 27pp; English.
XX
CC The present invention relates to a new composition containing
CC anti-allergic peptides useful in the treatment of allergic diseases. The
CC present peptide is an non-allergenic Bet v 1-derived synthetic peptide,
CC which does not contain Bet v 1-specific T-cell epitopes
XX
SQ Sequence 31 AA;

Query Match 100.0%; Score 174; DB 5; Length 31;
Best Local Similarity 100.0%; Pred. No. 4.1e-18;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CGPGTIKKISFPEGFPFKYVKDRVDEVDHTN 31
Db 1 CGPGTIKKISFPEGFPFKYVKDRVDEVDHTN 31

```

RESULT 2
ADR87216
ID ADR87216 standard; protein; 125 AA.
XX AC
XX ADR87216;
XX DT
XX 16-DEC-2004 (first entry)
XX DE
XX Birch pollen allergen Bet v 1 fragment SEQ ID NO:5.
XX KW
XX birch pollen; allergen; Bet v 1; T-cell response; IgE; immunoglobulin E;
XX immune response; antiallergic; gene therapy; vaccine.
XX OS
XX Betula sp.
XX PN
XX WO2004081028-A2.
XX PD
XX 23-SEP-2004.
XX PF
XX 15-MAR-2004; 2004WO-IB001300.
XX PR
XX 14-MAR-2003; 2003US-0455004P.
XX PR
XX 12-MAR-2004; 2004US-00799514.
XX XX
XX (UYLA-) UNIV LAUSANNE.
XX PA
XX Spertini F;
XX PI
XX WPI; 2004-668931/65.
XX DR
XX New compositions including contiguous overlapping peptide fragments that
XX form an entire amino acid sequence of an allergen (e.g. bee venom or
XX birch pollen allergen), useful for preventing or treating IgE-mediated
XX allergies.
XX Claim 2; SEQ ID NO 5; 82pp; English.
XX PS
XX The invention relates to novel compositions including contiguous
XX overlapping peptide fragments which together form an entire amino acid
XX sequence of an allergen, where the fragments are capable of inducing a
XX cell response in patients who are hypersensitive to the allergen. The
XX contiguous overlapping peptide fragments further result in lower levels
XX of IgE stimulation activity. The lower levels of IgE stimulation activity
XX are zero or weak. The contiguous overlapping peptide fragments further
XX result in a decrease in T-cell response upon subsequent exposure to the
XX allergen, thus, modulating an immune response in the patients, who are
XX hypersensitive to the allergen. A composition of the invention has
XX antiallergic activity, and may have a use in gene therapy, and as a
XX vaccine. The composition and methods are useful for preventing or
XX treating IgE-mediated allergies. The present sequence represents a
XX fragment of an allergen of the invention, birch pollen Bet v 1.
XX SQ
XX Sequence 125 AA;
XX Query Match 94.8%; Score 165; DB 8; Length 125;
XX Best Local Similarity 100.0%; Pred. No. 4.1e-16;
XX Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 2 GPGTIKKISFPEGFPFKYVKDRVDEVDHTN 31
Db 50 GPGTIKKISFPEGFPFKYVKDRVDEVDHTN 79
RESULT 3
ABM00015
ID ABM00015 standard; protein; 159 AA.
XX AC
XX ABM00015;
XX DT
XX 02-APR-2003 (first entry)
XX DE
XX Major pollen antigen Bet v 1-A SEQ ID NO 6.
XX
XX Allergen; protein coordinate data; vaccine; antiallergic; immunogenicity;
XX detergent; personal care composition; cosmetic.
XX OS
XX Betula pendula.
XX PN
XX WO200183559-A2.
XX PD
XX 08-NOV-2001.
XX PF
XX 30-APR-2001; 2001WO-DK000293.
XX PR
XX 28-APR-2000; 2000DK-00000707.
XX PR
XX 10-MAY-2000; 2000US-0203345P.
XX PR
XX 28-FEB-2001; 2001DK-00000327.
XX PR
XX 21-MAR-2001; 2001US-0277817P.
XX XX
XX (NOVO ) NOVOZYMES AS.
XX XX
XX Roggen EL, Ernst S, Svendsen A, Friis EP, Von Der Osten C;
XX WPI; 2001-626552/72.
XX DR
XX Selecting protein variants having modified immunogenicity, used to
XX produce vaccines, detergents and personal care compositions, involves
XX localizing epitope sequences on the three-dimensional structure of a
XX protein.
XX Claim 34; Page 484; 513pp; English.
XX PS
XX The invention relates to selecting a protein variant having modified
XX immunogenicity, compared to a parent protein, comprising using the
XX antibody binding sequence to localise epitope sequences on the three
XX dimensional structure of the parent protein and defining an epitope area
XX including amino acids within 5 Angstrom of the epitope amino acids. The
XX method is useful for identifying structural epitopes on the 3-dimensional
XX surface of commercial and environmental allergens. Compositions
XX containing the protein variants are used as vaccines, detergents and
XX personal care compositions, e.g. Shampoo, Balsam, hair conditioners, hair
XX waving compositions, hair dyeing compositions, hair tonic, hair liquid,
XX hair cream, hair rinse, hair spray, chewing gum, skin cream, sunscreen,
XX shaving foam, cream soap, skin milk or foundation. The present sequence
XX is that of a polypeptide of the invention
XX SQ
XX Sequence 159 AA;
XX Query Match 94.8%; Score 165; DB 4; Length 159;
XX Best Local Similarity 100.0%; Pred. No. 5.3e-16;
XX Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 2 GPGTIKKISFPEGFPFKYVKDRVDEVDHTN 31
Db 49 GPGTIKKISFPEGFPFKYVKDRVDEVDHTN 78
RESULT 4
ABB84185
ID ABB84185 standard; protein; 159 AA.
XX AC
XX ABB84185;
XX DT
XX 30-SEP-2002 (first entry)
XX DE
XX Birch pollen allergen Bet v1.
XX KW
XX Birch pollen allergen; Bet v1; transgenic plant; immunogenicity; epitope.
XX OS
XX Betula pendula.
XX PN
XX WO200232947-A1.
XX PD
XX 25-APR-2002.
XX

```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:43:45 ; Search time 15.9282 Seconds
(without alignments)
187.261 Million cell updates/sec

Title: US-10-026-911-3
Perfect score: 174
Sequence: 1 CGPGTIKKISFPEGFPFKYKDRVDEVDHTN 31

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues
Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR 80.*
1: Piri.*
2: Piri.*
3: Piri.*
4: Piri.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	165	94.8	160	2 E55699	major pollen aller
2	165	94.8	160	2 G55699	major pollen aller
3	165	94.8	160	2 S05376	major pollen aller
4	162	93.1	160	2 C55699	major pollen aller
5	162	93.1	160	2 F55699	major pollen aller
6	162	93.1	160	2 I55699	major pollen aller
7	152	87.4	160	2 D55699	major pollen aller
8	145	83.3	160	2 A57427	major pollen aller
9	145	83.3	160	2 H55699	major pollen aller
10	145	83.3	160	2 A55699	major pollen aller
11	145	83.3	160	2 S47250	gene 1-Sc1 protein
12	145	83.3	160	2 B55699	major pollen aller
13	137	78.7	159	2 S47351	gene 1-Sc2 protein
14	129	74.1	160	2 S47249	gene 1-Sc3 protein
15	117	67.2	160	2 S30056	major allergen Cor
16	117	67.2	160	2 S30055	major allergen Cor
17	117	67.2	160	2 S30053	major allergen Cor
18	117	67.2	160	2 S30054	major allergen Cor
19	95	54.6	153	2 S51119	MalD1 protein - ap
20	95	54.6	159	2 JC4276	major allergen Mal
21	90	51.7	159	2 T17004	major allergen Mal
22	84	48.3	155	1 SNFB2	pathogenesis-relat
23	83	47.7	160	2 T17007	major allergen Mal
24	83	47.7	160	2 T17005	major allergen Mal
25	83	47.7	160	2 T17006	major allergen Mal
26	81	46.6	155	2 S35161	STH-21 protein - p
27	81	46.6	155	2 S35162	pathogenesis-relat
28	79	45.4	156	1 SNFB1	A;Molecule type: mRNA
29	78	44.8	155	2 T11670	A;Residues: 1-160 <SNO>

30 77 44.3 158 2 S47140 pathogenesis-relat
31 77 44.3 158 2 S20517 hypothetical prote
32 76 43.7 155 2 S52664 pathogenesis-relat
33 75 43.1 158 2 S20518 hypothetical prote
34 74 42.5 83 2 T09391 ribosomal protein
35 74 42.5 178 2 T07403 TSI-1 protein - to
36 73 42.0 157 2 T10732 intracellular path
37 72 41.4 157 2 T09659 pathogenesis-relat
38 72 41.4 158 2 S12568 pathogenesis-relat
39 71 40.8 157 2 S42649 pathogenesis-relat
40 71 40.8 158 2 S42650 pathogenesis-relat
41 70 40.2 140 2 T10059 cytokinin-induced
42 67.5 38.8 158 2 S39754 pathogenesis-relat
43 67 38.5 157 2 T09526 stress response ge
44 63 36.2 94 2 T06417 pathogenesis-relat
45 63 36.2 155 2 S04553 pathogenesis-relat

ALIGNMENTS

RESULT 1

E55699 major pollen allergen Bet v 1f/i - European white birch

C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004

C;Accession: E55699; S41905; S41900
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, Ch, M.

J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom

A;Reference number: A55699; MUID:95155322; PMID:7852325
A;Accession: E55699
A;Molecule type: mRNA

A;Residues: 1-160 <SNO>

A;Cross-references: UNIPROT:P43179; UNIPARC:UPI000016DCF9; EMBL:X77268; NID:g452735; PI

A;Note: the source is designated as Betula verrucosa

R;Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffmann-Sommergruber, K.; Heberle-

submitted to the EMBL Data Library, January 1994

A;Reference number: S41896

A;Accession: S41905

A;Status: preliminary

A;Molecule type: mRNA

A;Residues: 1-160 <SNO>

A;Cross-references: UNIPARC:UPI000016DCF9; EMBL:X77274; NID:g452745; PIDN:CAA54490.1; P

A;Note: the source is designated as Betula verrucosa

C;Superfamily: pathogenesis-related protein

C;Keywords: pollen

F;2-160/Product: major pollen allergen Bet v 1f/i #status experimental <MAT>

Query Match 94.8%; Score 165; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 5.9e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 GPGTIKKISFPEGFPFKYKDRVDEVDHTN 31
|||||
Db 50 GPGTIKKISFPEGFPFKYKDRVDEVDHTN 79

RESULT 2

G55699

major pollen allergen Bet v 1j - European white birch

C;Species: Betula pendula (European white birch)

C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004

C;Accession: G55699; S41902

R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, Ch, M.

J. Biol. Chem. 270, 2607-2613, 1995

A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom

A;Reference number: A55699; MUID:95155322; PMID:7852325

A;Accession: G55699

A;Molecule type: mRNA

A;Residues: 1-160 <SNO>

A;Cross-references: UNIPROT:P43183; UNIPARC:UPI000016DCFB; EMBL:X77271; NID:g452739; PID
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1j #status experimental <MAT>

Query Match 94.8%; Score 165; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 5.9e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKKISFPFGFPFKYVKDRVDEVDHTN 31
|||||:|||||:|||||:|||||:|||||
Db 50 GPGTIKKISFPFGFPFKYVKDRVDEVDHTN 79

RESULT 3
S05376
major pollen allergen Bet v 1 - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 31-Mar-1990 #sequence_revision 31-Mar-1990 #text_change 09-Jul-2004
C;Accession: S05376; JC4834; B53288
R;Bretteneder, H.; Pettenburger, K.; Bito, A.; Valenta, R.; Kraft, D.; Rumpold, H.; Sche
EMBO J. 8, 1935-1938, 1989
A;Title: The gene coding for the major birch pollen allergen Betv1, is highly homologous
A;Reference number: S05376; MUID:90005395; PMID:2571499
A;Accession: S05376
A;Molecule type: mRNA
A;Residues: 1-160 <BRE>
A;Cross-references: UNIPROT:P15494; UNIPARC:UPI0000000314; EMBL:X15877; NID:gl7937; PIDN
R;Kungl, A.J.; Susani, M.; Lindenmann, A.; Machius, M.; Visser, A.J.W.G.; Scheiner, O.; K
Biochem. Biophys. Res. Commun. 223, 187-192, 1996
A;Title: Evidence for an alpha helical T cell epitope in the C-terminus of the main birch
A;Reference number: JC4834; MUID:96254050; PMID:8660368
A;Accession: JC4834
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-160 <KUN>
A;Cross-references: UNIPARC:UPI00000000314
Mol. Immunol. 28, 1279-1288, 1991
R;Ipsen, H.; Hansen, O.C.
A;Title: The NH2-terminal amino acid sequence of the immunochemically partial identical
b) Car b I and oak (Quercus alba) Que a I pollens
A;Reference number: A53288; MUID:92072607; PMID:1961201
A;Accession: B53288
A;Status: preliminary
A;Molecule type: protein
A;Residues: 2-39, 'XX', 42-44 <IPS>
A;Cross-references: UNIPARC:UPI0000177F58; PID:g239734; PIDN:AAB20452.1
A;Experimental source: pollen
A;Note: sequence extracted from NCBI backbone (NCBI:P68408)
A;Note: the source is designated as Betula verrucosa
C;Comment: This protein induces IgE synthesis by B cells in a T cell dependent manner.
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1 #status experimental <MAT>

Query Match 94.8%; Score 165; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 5.9e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKKISFPFGFPFKYVKDRVDEVDHTN 31
|||||:|||||:|||||:|||||:|||||
Db 50 GPGTIKKISFPFGFPFKYVKDRVDEVDHTN 79

RESULT 4
C55699
major pollen allergen Bet v 1d/h - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C;Accession: C55699; S41901; S41898
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom
A;Reference number: A55699; MUID:95155322; PMID:7852325
A;Accession: I55699

J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom
A;Reference number: A55699; MUID:95155322; PMID:7852325
A;Accession: C55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: UNIPROT:P43177; UNIPARC:UPI000016DCF7; EMBL:X77266; NID:g452731; PI
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffmann-Sommergruber, K.; Heberle-
submitted to the EMBL Data Library, January 1994
A;Reference number: S41896
A;Accession: S41901
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SW2>
A;Cross-references: UNIPARC:UPI000016DCF7; EMBL:X77270; NID:g452737; PIDN:CAA54486.1; P
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1d/h #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 93.1%; Score 162; DB 2; Length 160;
Best Local Similarity 96.7%; Pred. No. 1.6e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKKISFPFGFPFKYVKDRVDEVDHTN 31
|||||:|||||:|||||:|||||:|||||
Db 50 GPGTIKKINFPFGFPFKYVKDRVDEVDHTN 79

RESULT 5
F55699
major pollen allergen Bet v 1g - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C;Accession: F55699; S41896
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom
A;Reference number: A55699; MUID:95155322; PMID:7852325
A;Accession: F55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: UNIPROT:P43180; UNIPARC:UPI000016DCFA; EMBL:X77269; NID:g452727; PI
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1g #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 93.1%; Score 162; DB 2; Length 160;
Best Local Similarity 96.7%; Pred. No. 1.6e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKKISFPFGFPFKYVKDRVDEVDHTN 31
|||||:|||||:|||||:|||||:|||||
Db 50 GPGTIKKINFPFGFPFKYVKDRVDEVDHTN 79

RESULT 6
I55699
major pollen allergen Bet v 1l - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C;Accession: I55699; S41904
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom
A;Reference number: A55699; MUID:95155322; PMID:7852325
A;Accession: I55699

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioacceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:43:29 ; Search time 52.2376 Seconds
(without alignments)
418.691 Million cell updates/sec

Title: US-10-026-911-3
Perfect score: 174
Sequence: 1 CGPGTIKKISFPEGFPFKYKRVDEVDHTN 31

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2166443 seqs, 705528306 residues

Total number of hits satisfying chosen parameters: 2166443

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Maximum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : UniProt_05.80.*
1: uniprot_sprot.*
2: uniprot_trembl.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	165	94.8	120	2 Q9SCH7_BETVE	Q9sch7 betula verr
2	165	94.8	120	2 Q9SCH11_BETVE	Q9sch11 betula verr
3	165	94.8	159	1 BEVIA_BETVE	P15494 betula verr
4	165	94.8	159	1 BEVIF_BETVE	P43179 betula verr
5	165	94.8	159	1 BEVIJ_BETVE	P43183 betula verr
6	165	94.8	159	2 Q23750_BETVE	Q23750 betula verr
7	165	94.8	159	2 Q546V0_BETVE	Q546V0 betula verr
8	165	94.8	160	2 Q9SCH6_BETVE	Q9sch6 betula verr
9	165	94.8	160	2 Q9SYW1_BETVE	Q9syw1 betula verr
10	165	94.8	160	2 Q24642_BETVE	Q24642 betula verr
11	165	94.8	160	2 Q42499_BETVE	Q42499 betula verr
12	165	94.8	160	2 Q23752_BETVE	Q23752 betula verr
13	165	94.8	160	2 Q546U3_BETVE	Q546U3 betula verr
14	165	94.8	160	2 Q96365_BETVE	Q96365 betula verr
15	165	94.8	160	2 Q96366_BETVE	Q96366 betula verr
16	165	94.8	160	2 Q96367_BETVE	Q96367 betula verr
17	165	94.8	160	2 Q96370_BETVE	Q96370 betula verr
18	165	94.8	160	2 Q96371_BETVE	Q96371 betula verr
19	165	94.8	160	2 Q9SCH8_BETVE	Q9sch8 betula verr
20	165	94.8	160	2 Q9SC10_BETVE	Q9sc10 betula verr
21	165	94.8	160	2 Q9SC13_BETVE	Q9sc13 betula verr
22	165	94.8	160	2 Q9SYW0_BETVE	Q9syw0 betula verr
23	165	94.8	160	2 Q9ZS39_BETVE	Q9zs39 betula verr
24	162	93.1	159	1 BEVID_BETVE	P43177 betula verr
25	162	93.1	159	1 BEVIG_BETVE	P43180 betula verr
26	162	93.1	159	1 BEVIL_BETVE	P43185 betula verr
27	162	93.1	159	2 Q23746_BETVE	Q23746 betula verr
28	162	93.1	159	2 Q546V1_BETVE	Q546V1 betula verr
29	162	93.1	160	2 Q23751_BETVE	Q23751 betula verr
30	162	93.1	160	2 Q23753_BETVE	Q23753 betula verr
31	162	93.1	160	2 Q23754_BETVE	Q23754 betula verr

32 162 93.1 160 2 Q9AYS4_9ROSI Q9ays4 betula plat
33 162 93.1 160 2 Q9SCH9_BETVE Q9sch9 betula verr
34 162 93.1 160 2 Q9SC12_BETVE Q9sc12 betula verr
35 161 92.5 160 2 Q9AYS2_9ROSI Q9ays2 betula plat
36 158 90.8 160 2 Q9AYS3_9ROSI Q9ays3 betula plat
37 154 88.5 159 2 Q23748_BETVE Q23748 betula verr
38 154 88.5 160 2 Q39426_BETVE Q39426 betula verr
39 154 88.5 160 2 Q9SCH5_BETVE Q9sch5 betula verr
40 154 88.5 160 2 Q9SYW2_BETVE Q9syw2 betula verr
41 152 87.4 159 1 BEVIE_BETVE P43178 betula verr
42 152 87.4 160 2 Q96368_BETVE Q96368 betula verr
43 151 86.8 160 2 Q39431_BETVE Q39431 betula verr
44 145 83.3 159 1 BEVIB_BETVE P45431 betula verr
45 145 83.3 159 1 BEVIC_BETVE P43176 betula verr

ALIGNMENTS

RESULT 1
Q9SCH7_BETVE
ID Q9SCH7_BETVE PRELIMINARY; PRT; 120 AA.
AC Q9SCH7_...
DT 01-MAY-2000 (Tremblrel. 13, Created)
DT 01-MAY-2000 (Tremblrel. 13, Last sequence update)
DT 01-JUN-2003 (Tremblrel. 24, Last annotation update)
DE Pollen allergen Betv1, isoform at87.
GN Name=betv1;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
OC eurosids I; Fagales; Betulaceae; Betula.
OX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pollen.
RX MEDLINE=99437514; PubMed=10509815; DOI=10.1016/S0161-5890(99)00078-4;
RA Friedl-Hajek R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
Leberl K., Scheiner O., Breiteneder H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
of the protein derived from Austrian birch pollen.";
RL Mol. Immunol. 36:639-645(1999).
DR EMBL; AJ008913; CAA07328.1; -; mRNA.
DR HSSP; P15494; 1B6F.
DR SMR; Q9SCH7; 2-119.
DR InterPro; IPR000916; Bet v I.
DR Pfam; PF00407; Bet v I; I_
DR PRINTS; PR00634; BETALLERGEN.
DR ProDom; PD000531; Bet_v_I; 1.
SQ SEQUENCE 120 AA; 13073 MW; 95EB4309C0808BFC CRC64;

Query Match 94.8%; Score 165; DB 2; Length 120;
Best Local Similarity 100.0%; Pred. No. 2e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKKISFPEGFPFKYKRVDEVDHTN 31
|||||
Db 50 GPGTIKKISFPEGFPFKYKRVDEVDHTN 79
|||||

RESULT 2
Q9SCH11_BETVE
ID Q9SCH11_BETVE PRELIMINARY; PRT; 120 AA.
AC Q9SCH11_...
DT 01-MAY-2000 (Tremblrel. 13, Created)
DT 01-MAY-2000 (Tremblrel. 13, Last sequence update)
DT 01-JUN-2003 (Tremblrel. 24, Last annotation update)
DE Pollen allergen Betv1, isoform at14.
GN Name=betv1;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
OC eurosids I; Fagales; Betulaceae; Betula.

```

OX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pollen;
RX MEDLINE=99437514; PubMed=10509815; DOI=10.1016/S0161-5990(99)00078-4;
RA Friedl-Hajek R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
RA Leberl K., Scheiner O., Breiteneder H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
RT of the protein derived from Austrian birch pollen.";
RL MBL; Immunol. 36:639-645(1999).
DR EMBL; AJ006905; CAB07320.1; -; mRNA.
DR HSSP; P15494; 1B6F.
DR SMR; Q98C11; 2-119.
DR InterPro; IPR000916; Bet_v_I.
DR Pfam; PF00407; Bet_v_I; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR ProDom; PD000531; Bet_v_I; 1.
SQ SEQUENCE 120 AA; 13055 MW; 95EB4309C4CB4CBF CRC64;

Query Match 94.8%; Score 165; DB 2; Length 120;
Best Local Similarity 100.0%; Pred. No. 2e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKKISFPEGFPFKYVKRVDVDTN 31
DB 50 GPGTIKKISFPEGFPFKYVKRVDVDTN 79

RESULT 3
BEVIA_BETVE STANDARD; PRT; 159 AA.
AC P15494; Q96369;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 10-MAY-2005 (Rel. 47, Last annotation update)
DE Major pollen allergen Bet v 1-A (Bet v I-A).
GN Name=BETVIA; Synonyms=BETVI;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
OC Rosids; eurosids I; Fagales; Betulaceae; Betula.
OX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE, AND PROTEIN SEQUENCE OF 1-34.
RC TISSUE=Pollen;
RX MEDLINE=90005395; PubMed=2571499;
RA Breiteneder H., Pattenburger K., Bito A., Valenta R., Kraft D.,
RA Rumpold H., Scheiner O., Breitenbach M.;
RT "The gene coding for the major birch pollen allergen Betv1, is highly
RT homologous to a pea disease resistance response gene.";
RL EMBO J. 8:1935-1938(1989).
RN [2]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pollen;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DBJ databases.
RN [3]
RP PROTEIN SEQUENCE.
RC TISSUE=Pollen;
RX MEDLINE=95155322; PubMed=7852335; DOI=10.1074/jbc.270.6.2607;
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
RN [4]
RP PARTIAL PROTEIN SEQUENCE.
RX MEDLINE=91317572; PubMed=2101127;
RA Elsayed S., Vik H.;
RT "Purification and N-terminal amino acid sequence of two birch pollen
RT isoallergens (Bet v I and Bet v II).";
RL Int. Arch. Allergy Appl. Immunol. 93:378-384(1990).

```

```

RN [5]
RP X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS), AND STRUCTURE BY NMR.
RX MEDLINE=97102431; PubMed=8946858;
RA Gajhede M., Omarik P., Poulsen F.M., Ipsen H., Larsen J.N.,
RA van Neerven R.J.J., Schou C., Loewenstein H., Spangfort M.D.;
RT "X-ray and NMR structure of Bet v 1, the origin of birch pollen
RT allergy.";
RL Nat. Struct. Biol. 3:1040-1045(1996).
CC -!- SUBCELLULAR LOCATION: Cytoplasmic.
CC -!- ALLERGEN: Causes an allergic reaction in human. Is a cause of type
CC I allergic reactions in Europe, North America and USSR.
CC -!- SIMILARITY: Belongs to the Betv1 family.
CC
CC This Swiss-Prot entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use as long as its content is in no way modified and this statement is not
CC removed.
CC
CC EMBL; X15877; CAA33887.1; -; mRNA.
CC EMBL; Z80098; CAB02153.1; -; mRNA.
CC EMBL; Z80099; CAB02154.1; -; mRNA.
CC EMBL; Z80104; CAB02159.1; -; mRNA.
CC PIR; S05376; S05376.
CC PDB; 1B6F; NMR; A=1-159.
CC PDB; 1BTU; NMR; @=1-159.
CC PDB; 1BV1; X-ray; @=1-159.
CC PDB; 1FSK; X-ray; A/D/G/J=1-159.
CC PDB; 1LLT; X-ray; A=1-159.
CC PDB; 1QMR; X-ray; A=1-159.
CC InterPro; IPR000916; Bet_v_I.
CC Pfam; PF00407; Bet_v_I; 1.
CC PRINTS; PR00634; BETALLERGEN.
CC ProDom; PD000531; Bet_v_I; 1.
CC PROSITE; PS00451; PATHOGENESIS BETV1; 1.
KW 3D-structure; Allergen; Direct protein sequencing; Multigene family;
KW Pathogenesis-related protein; Plant defense.
FT INIT MET 0
FT VARIANT 62 62 F -> L.
FT STRAND 2 11
FT HELIX 23 25
FT TURN 23 25
FT HELIX 26 33
FT TURN 35 37
FT STRAND 40 45
FT TURN 50 51
FT STRAND 53 57
FT TURN 60 61
FT STRAND 66 75
FT TURN 76 79
FT STRAND 80 88
FT TURN 89 90
FT STRAND 92 92
FT TURN 93 94
FT STRAND 95 106
FT TURN 108 109
FT STRAND 112 122
FT TURN 124 125
FT HELIX 130 153
FT TURN 155 159
SQ SEQUENCE 159 AA; 17440 MW; 96E181194BBA83E6 CRC64;

Query Match 94.8%; Score 165; DB 1; Length 159;
Best Local Similarity 100.0%; Pred. No. 2.7e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKKISFPEGFPFKYVKRVDVDTN 31
DB 49 GPGTIKKISFPEGFPFKYVKRVDVDTN 78

RESULT 4
BEVIF_BETVE

```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:44:15 ; Search time 24.4917 Seconds
(without alignments)
104.645 Million cell updates/sec

Title: US-10-026-911-3

Perfect score: 174

Sequence: 1 CGPGTIKKISFPEGFFKYKVRDEVDHTN 31

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 572060 seqs, 82675679 residues

Total number of hits satisfying chosen parameters: 572060

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Issued Patents AA:*
1: /cgn2_6/ptodata/1/iaa/5 COMB.pep.*
2: /cgn2_6/ptodata/1/iaa/6 COMB.pep.*
3: /cgn2_6/ptodata/1/iaa/H COMB.pep.*
4: /cgn2_6/ptodata/1/iaa/PTUS COMB.pep.*
5: /cgn2_6/ptodata/1/iaa/RE COMB.pep.*
6: /cgn2_6/ptodata/1/iaa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	165	94.8	160	1	US-07-847-010-23
2	137	78.7	160	1	US-07-847-010-3
3	117	67.2	160	1	US-07-847-010-11
4	117	67.2	160	1	US-07-847-010-14
5	117	67.2	160	1	US-07-847-010-17
6	117	67.2	160	1	US-07-847-010-20
7	79	45.4	158	2	US-08-364-722-2
8	76	43.7	158	6	5312912-2
9	73.5	42.2	161	2	US-08-955-629C-2
10	67.5	38.8	158	2	US-08-199-219-6
11	56	32.2	160	2	US-09-257-583-11
12	55	31.6	154	1	US-08-363-010-1
13	55	31.6	154	1	US-08-911-434A-4
14	53.5	30.7	152	2	US-09-598-401C-64
15	50	28.7	141	2	US-09-248-796A-18732
16	50	28.7	225	2	US-09-866-538-12
17	50	28.7	225	2	US-09-865-291-12
18	50	28.7	240	2	US-10-152-296-2
19	49.5	28.4	133	2	US-09-252-991A-32224
20	48.5	27.9	500	2	US-09-949-016-8865
21	48.5	27.9	502	2	US-09-248-796A-17327
22	48.5	27.9	704	2	US-10-109-084-2
23	48.5	27.9	710	2	US-10-109-084-7
24	48.5	27.9	866	2	US-09-949-016-6568
25	48.5	27.9	870	2	US-09-538-092-1168
26	48	27.6	252	2	US-09-134-000C-4831
27	48	27.6	361	2	US-09-252-991A-32045

Sequence 42332, A
Sequence 1, Appl
Sequence 2, Appl
Sequence 1, Appl
Sequence 16886, A
Sequence 46128, A
Sequence 10446, A
Sequence 916, App
Sequence 851, App
Sequence 15140, A
Sequence 804, App
Sequence 3604, App
Sequence 10, Appl
Sequence 10970, A
Sequence 2, Appl
Sequence 11, Appl
Sequence 11, Appl
Sequence 765, App

28 48 27.6 779 2 US-09-270-767-42332
29 48 27.6 2233 1 US-08-569-853-1
30 48 27.6 2233 1 US-08-569-853-2
31 48 27.6 2233 2 US-08-987-439-1
32 47.5 27.3 337 2 US-09-252-991A-16886
33 47 27.0 293 2 US-09-270-767-46128
34 47 27.0 412 2 US-09-902-540-10446
35 47 27.0 1075 2 US-09-198-452A-916
36 47 27.0 1178 2 US-09-438-185A-851
37 46.5 26.7 341 2 US-09-248-796A-15140
38 46.5 26.7 453 2 US-09-710-279-804
39 46.5 26.7 461 2 US-09-134-001C-3604
40 46.5 26.7 491 2 US-09-321-969-10
41 46.5 26.7 1935 2 US-09-949-016-10970
42 46 26.4 153 2 US-09-694-127-2
43 46 26.4 401 1 US-08-198-446B-11
44 46 26.4 401 1 US-08-870-693-11
45 46 26.4 401 2 US-09-538-092-765

ALIGNMENTS

RESULT 1

US-07-847-010-23
; Sequence 23, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valentia, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Fennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 23:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:

```
; ORGANISM: birch (Betula sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERCON AB, ENGELHOLM, SWEDEN
US-07-847-010-23

Query Match          94.8%; Score 165; DB 1; Length 160;
Best Local Similarity 100.0%; Pred. No. 1.8e-17;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKISFPFGPKYKRVDEVDHTN 31
    |||||:|||||:|||||:|||||:|||||
Db 50 GPGTIKISFPFGPKYKRVDEVDHTN 79

RESULT 2
US-07-847-010-3
; Sequence 3, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: Alder (Alnus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERCON AB, ENGELHOLM, SWEDEN
US-07-847-010-3

Query Match          78.7%; Score 137; DB 1; Length 160;
Best Local Similarity 83.3%; Pred. No. 3.7e-13;
Matches 25; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY 2 GPGTIKISFPFGPKYKRVDEVDHTN 31
    |||||:|||||:|||||:|||||:|||||
```

```
Db 50 GPGTIKITFPGSPFKYKRVDEVDN 79

RESULT 3
US-07-847-010-11
; Sequence 11, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 11:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERCON AB, ENGELHOLM, SWEDEN
US-07-847-010-11

Query Match          67.2%; Score 117; DB 1; Length 160;
Best Local Similarity 73.3%; Pred. No. 4.3e-10;
Matches 22; Conservative 4; Mismatches 4; Indels 0; Gaps 0;

QY 2 GPGTIKISFPFGPKYKRVDEVDHTN 31
    |||||:|||||:|||||:|||||:|||||
Db 50 GPGTIKITFPGSPFKYKRVDEVDN 79

RESULT 4
US-07-847-010-14
; Sequence 14, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
```


GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 10:01:54 ; Search time 37.8508 Seconds
(without alignments)
342.204 Million cell updates/sec

Title: US-10-026-911-3

Perfect score: 174

Sequence: 1 CGPGTIKKISFPEGFPFKYKVRVDEVDHTN 31

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1867569 seqs, 417829326 residues

Total number of hits satisfying chosen parameters: 1867569

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Published Applications_AA_Main:*

1: /cgn2_6/ptodata/1/pubppaa/US07_PUBCOMB.pep:*

2: /cgn2_6/ptodata/1/pubppaa/US08_PUBCOMB.pep:*

3: /cgn2_6/ptodata/1/pubppaa/US09_PUBCOMB.pep:*

4: /cgn2_6/ptodata/1/pubppaa/US10A_PUBCOMB.pep:*

5: /cgn2_6/ptodata/1/pubppaa/US10B_PUBCOMB.pep:*

6: /cgn2_6/ptodata/1/pubppaa/US11_PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	174	100.0	31	4	US-10-026-911-3
2	165	94.8	125	5	US-10-799-514-5
3	165	94.8	159	3	US-09-981-009B-1
4	165	94.8	159	3	US-09-847-208-34
5	165	94.8	159	3	US-09-847-208-38
6	165	94.8	159	3	US-09-847-208-40
7	165	94.8	159	3	US-09-957-806A-6
8	165	94.8	160	4	US-10-440-516-2
9	165	94.8	160	4	US-10-440-516-6
10	165	94.8	160	5	US-10-799-514-7
11	165	94.8	160	5	US-10-809-689-87
12	165	94.8	195	5	US-10-799-514-18
13	165	94.8	195	5	US-10-799-514-20
14	162	93.1	159	3	US-09-847-208-36
15	162	93.1	159	3	US-09-847-208-39
16	162	93.1	159	3	US-09-847-208-42
17	160	92.0	160	4	US-10-440-516-8
18	159	91.4	159	4	US-10-001-245-3
19	159	91.4	159	4	US-10-001-245-5
20	159	91.4	159	4	US-10-001-245-92
21	159	91.4	159	4	US-10-440-516-47
22	159	91.4	159	4	US-10-719-553-37
23	159	91.4	159	4	US-10-698-855-5
24	159	91.4	160	4	US-10-440-516-1
25	159	91.4	160	4	US-10-440-516-3
26	159	91.4	160	4	US-10-440-516-4
27	159	91.4	160	4	US-10-440-516-5

28 159 91.4 160 4 US-10-440-516-7
29 159 91.4 161 4 US-10-440-516-44
30 159 91.4 161 4 US-10-440-516-45
31 154 88.5 159 4 US-10-001-245-4
32 154 88.5 159 4 US-10-001-245-9
33 153 87.9 159 4 US-10-001-245-2
34 153 87.9 160 4 US-10-001-245-1
35 153 87.9 160 4 US-10-001-245-6
36 153 87.9 160 4 US-10-001-245-8
37 153 87.9 160 4 US-10-001-245-10
38 152 87.4 159 3 US-09-847-208-37
39 149 85.6 160 4 US-10-440-516-23
40 149 85.6 160 4 US-10-440-516-24
41 149 85.6 160 4 US-10-440-516-29
42 149 85.6 160 4 US-10-440-516-31
43 149 85.6 160 4 US-10-440-516-40
44 148.5 85.3 161 4 US-10-440-516-43
45 148 85.1 160 4 US-10-001-245-7

ALIGNMENTS

RESULT 1
US-10-026-911-3
; Sequence 3, Application US/10026911
; Publication No. US20030078201A1
; GENERAL INFORMATION:
; APPLICANT: Focke, Margarete
; APPLICANT: Mahler, Vera
; APPLICANT: Speert, Wolfgang R.
; APPLICANT: Valent, Peter
; APPLICANT: Kraft, Dietrich
; APPLICANT: Valenta, Rudolf
; TITLE OF INVENTION: Allergy Vaccines and Their Preparation
; FILE REFERENCE: 0273-0005
; CURRENT APPLICATION NUMBER: US/10/026,911
; CURRENT FILING DATE: 2002-07-24
; NUMBER OF SEQ ID NOS: 6
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 3
; LENGTH: 31
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:
; OTHER INFORMATION: solvent-exposed peptide

US-10-026-911-3
Query Match 100.0%; Score 174; DB 4; Length 31;
Best Local Similarity 100.0%; Pred. No. 1.9e-18;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CGPGTIKKISFPEGFPFKYKVRVDEVDHTN 31
Db 1 CGPGTIKKISFPEGFPFKYKVRVDEVDHTN 31

RESULT 2
US-10-799-514-5
; Sequence 5, Application US/10799514
; Publication No. US20040241178A1
; GENERAL INFORMATION:
; APPLICANT: Spertini, Francois
; APPLICANT: Cortesev, Blaise
; TITLE OF INVENTION: Allergen Peptide Fragments and Use Thereof
; FILE REFERENCE: 25720-502
; CURRENT APPLICATION NUMBER: US/10/799,514
; CURRENT FILING DATE: 2004-03-12
; PRIOR APPLICATION NUMBER: 60/455,004
; PRIOR FILING DATE: 2003-03-14
; NUMBER OF SEQ ID NOS: 23
; SOFTWARE: PatentIn Ver. 2.1

```
; SEQ ID NO 5
; LENGTH: 125
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
; OTHER INFORMATION: Peptide
US-10-799-514-5

Query Match          94.8%; Score 165; DB 5; Length 125;
Best Local Similarity 100.0%; Pred. No. 2.9e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKKISFPGFPFKYVKDRVDEVDHTN 31
   |||||||
Db 50 GPGTIKKISFPGFPFKYVKDRVDEVDHTN 79

RESULT 3
US-09-981-009B-1
; Sequence 1, Application US/09981009B
; Publication No. US20030041354A1
; GENERAL INFORMATION:
; APPLICANT: Kjaerulff, Soren
; APPLICANT: Roggen, Erwin
; TITLE OF INVENTION: Transgenic Plants
; FILE REFERENCE: 10082.200-US
; CURRENT APPLICATION NUMBER: US/09/981,009B
; CURRENT FILING DATE: 2002-06-14
; NUMBER OF SEQ ID NOS: 5
; SOFTWARE: Patent in version 3.1
; SEQ ID NO 1
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula pendula
US-09-981-009B-1

Query Match          94.8%; Score 165; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 2.9e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKKISFPGFPFKYVKDRVDEVDHTN 31
   |||||||
Db 49 GPGTIKKISFPGFPFKYVKDRVDEVDHTN 78

RESULT 4
US-09-847-208-34
; Sequence 34, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
; APPLICANT: Zhu, Daocheng
; TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
; TITLE OF INVENTION: IGE-MEDIATED ALLERGIC DISEASES
; FILE REFERENCE: UC67.002A
; CURRENT APPLICATION NUMBER: US/09/847,208
; CURRENT FILING DATE: 2001-05-01
; NUMBER OF SEQ ID NOS: 177
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 34
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa (White birch) (Betula pendula)
US-09-847-208-34

Query Match          94.8%; Score 165; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 2.9e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKKISFPGFPFKYVKDRVDEVDHTN 31
   |||||||
Db 49 GPGTIKKISFPGFPFKYVKDRVDEVDHTN 78

RESULT 5
US-09-847-208-38
; Sequence 38, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
; APPLICANT: Zhu, Daocheng
; TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
; TITLE OF INVENTION: IGE-MEDIATED ALLERGIC DISEASES
; FILE REFERENCE: UC67.002A
; CURRENT APPLICATION NUMBER: US/09/847,208
; CURRENT FILING DATE: 2001-05-01
; NUMBER OF SEQ ID NOS: 177
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 38
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa (White birch) (Betula pendula)
US-09-847-208-38

Query Match          94.8%; Score 165; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 2.9e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKKISFPGFPFKYVKDRVDEVDHTN 31
   |||||||
Db 49 GPGTIKKISFPGFPFKYVKDRVDEVDHTN 78

RESULT 6
US-09-847-208-40
; Sequence 40, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
; APPLICANT: Zhu, Daocheng
; TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
; TITLE OF INVENTION: IGE-MEDIATED ALLERGIC DISEASES
; FILE REFERENCE: UC67.002A
; CURRENT APPLICATION NUMBER: US/09/847,208
; CURRENT FILING DATE: 2001-05-01
; NUMBER OF SEQ ID NOS: 177
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 40
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa (White birch) (Betula pendula)
US-09-847-208-40

Query Match          94.8%; Score 165; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 2.9e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKKISFPGFPFKYVKDRVDEVDHTN 31
   |||||||
Db 49 GPGTIKKISFPGFPFKYVKDRVDEVDHTN 78

RESULT 7
US-09-957-806A-6
; Sequence 6, Application US/09957806A
; Publication No. US20050181446A1
; GENERAL INFORMATION:
; APPLICANT: Roggen, Erwin
; APPLICANT: Ernst, Steffen
; APPLICANT: Svendsen, Allan
; APPLICANT: Friis, Esben
; APPLICANT: Osten, Claus
```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 10:05:54 ; Search time 6.85083 Seconds
(without alignments)
192.264 Million cell updates/sec

Title: US-10-026-911-3
Perfect score: 174
Sequence: 1 CGPGTIKKISFPEGFPFKYKDRVDEVDHTN 31

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 217505 seqs, 42489236 residues

Total number of hits satisfying chosen parameters: 217505

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Published Applications AA New:*
1: /SIDSS/ptodata/1/pubpaa/US08_NEW_PUB.pep:*
2: /SIDSS/ptodata/1/pubpaa/US06_NEW_PUB.pep:*
3: /SIDSS/ptodata/1/pubpaa/US07_NEW_PUB.pep:*
4: /SIDSS/ptodata/1/pubpaa/PCT_NEW_PUB.pep:*
5: /SIDSS/ptodata/1/pubpaa/US09_NEW_PUB.pep:*
6: /SIDSS/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
7: /SIDSS/ptodata/1/pubpaa/US11_NEW_PUB.pep:*
8: /SIDSS/ptodata/1/pubpaa/US60_NEW_PUB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	165	94.8	160	6	US-10-498-026-81
2	165	94.8	172	7	US-11-102-883-18
3	165	94.8	289	7	US-11-102-883-26
4	165	94.8	300	7	US-11-102-883-6
5	73.5	42.2	161	7	US-11-172-740-184
6	73.5	42.2	161	7	US-11-172-740-185
7	73.5	42.2	161	7	US-11-172-740-186
8	73.5	42.2	161	7	US-11-172-740-187
9	62	35.6	283	7	US-11-102-883-32
10	62	35.6	294	7	US-11-102-883-30
11	55	31.6	515	7	US-11-188-298-1985
12	55	31.6	515	7	US-11-188-298-21158
13	55	31.6	534	7	US-11-188-298-14743
14	53.5	30.7	152	6	US-10-927-641-64
15	51	29.3	479	7	US-11-194-246-310
16	50	28.7	225	6	US-10-209-208-1
17	50	28.7	225	6	US-10-209-208-4
18	50	28.7	225	6	US-10-209-208-20
19	50	28.7	225	6	US-10-209-208-24
20	50	28.7	225	7	US-11-218-880-1
21	50	28.7	225	7	US-11-218-880-4
22	50	28.7	225	7	US-11-218-880-20
23	50	28.7	225	7	US-11-218-880-24
24	50	28.7	225	7	US-11-100-988-2
25	50	28.7	225	7	US-11-100-988-3

26	50	28.7	225	7	US-11-187-622-8	Sequence 8, Appli
27	50	28.7	225	7	US-11-187-622-12	Sequence 12, Appli
28	50	28.7	226	6	US-10-209-208-6	Sequence 6, Appli
29	50	28.7	226	7	US-11-218-880-6	Sequence 6, Appli
30	50	28.7	230	7	US-11-082-154A-40	Sequence 40, Appli
31	50	28.7	740	7	US-11-079-463-8427	Sequence 8427, Ap
32	49	28.2	302	7	US-11-096-568A-7577	Sequence 7577, Ap
33	49	28.2	348	7	US-11-096-568A-7576	Sequence 7576, Ap
34	49	28.2	350	7	US-11-096-568A-7575	Sequence 7575, Ap
35	48	27.6	350	7	US-11-172-740-932	Sequence 932, App
36	48	27.6	357	7	US-11-172-740-931	Sequence 931, App
37	48	27.6	1021	7	US-11-079-463-7535	Sequence 7535, Ap
38	47.5	27.3	366	6	US-10-467-657-2086	Sequence 2086, Ap
39	47.5	27.3	532	7	US-11-096-568A-2153	Sequence 2153, Ap
40	47.5	27.3	561	7	US-11-096-568A-2152	Sequence 2152, Ap
41	47.5	27.3	601	7	US-11-096-568A-2151	Sequence 2151, Ap
42	46.5	26.7	287	7	US-11-079-463-7691	Sequence 7691, Ap
43	46.5	26.7	453	6	US-10-793-626-804	Sequence 804, App
44	46.5	26.7	505	7	US-11-188-298-17898	Sequence 17898, A
45	46.5	26.7	607	7	US-11-024-959-381	Sequence 381, App

ALIGNMENTS

RESULT 1
US-10-498-026-81
; Sequence 81, Application US/10498026
; Publication No. US20060024334A1
; GENERAL INFORMATION:
; APPLICANT: CIRCASSIA LIMITED
; TITLE OF INVENTION: IMMUNOTHERAPEUTIC METHODS AND SYSTEMS
; FILE REFERENCE: N.87430 WO GCW
; CURRENT APPLICATION NUMBER: US/10/498,026
; CURRENT FILING DATE: 2004-06-04
; NUMBER OF SEQ ID NOS: 118
; SOFTWARE: Patent in version 3.1
; SEQ ID NO 81
; LENGTH: 160
; TYPE: PRT
; ORGANISM: Betula pendula
US-10-498-026-81

Query Match 94.8%; Score 165; DB 6; Length 160;
Best Local Similarity 100.0%; Pred. No. 5.6e-17;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 GPGTIKKISFPEGFPFKYKDRVDEVDHTN 31
DB 50 GPGTIKKISFPEGFPFKYKDRVDEVDHTN 79

RESULT 2
US-11-102-883-18
; Sequence 18, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lampung, Norbert
; APPLICANT: Crameri, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods an
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: Patent in version 3.2

```
; SEQ ID NO 18
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Betula verrucosa
US-11-102-883-18

Query Match          94.8%; Score 165; DB 7; Length 172;
Best Local Similarity 100.0%; Pred. No. 6.1e-17;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  2 GPGTIKKISFPEGFPFKYVKDRVDEVDHTN 31
    |||||
Db   62 GPGTIKKISFPEGFPFKYVKDRVDEVDHTN 91

RESULT 3
US-11-102-883-26
; Sequence 26, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lamping, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 26
; LENGTH: 289
; TYPE: PRT
; ORGANISM: tat-li-bet v 1
US-11-102-883-26

Query Match          94.8%; Score 165; DB 7; Length 289;
Best Local Similarity 100.0%; Pred. No. 1.1e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  2 GPGTIKKISFPEGFPFKYVKDRVDEVDHTN 31
    |||||
Db   179 GPGTIKKISFPEGFPFKYVKDRVDEVDHTN 208

RESULT 4
US-11-102-883-6
; Sequence 6, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lamping, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 6
```

```
; LENGTH: 300
; TYPE: PRT
; ORGANISM: Human immunodeficiency virus + Homo sapiens + Betula verrucosa
US-11-102-883-6

Query Match          94.8%; Score 165; DB 7; Length 300;
Best Local Similarity 100.0%; Pred. No. 1.1e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  2 GPGTIKKISFPEGFPFKYVKDRVDEVDHTN 31
    |||||
Db   190 GPGTIKKISFPEGFPFKYVKDRVDEVDHTN 219

RESULT 5
US-11-172-740-184
; Sequence 184, Application US/11172740
; Publication No. US20060057724A1
; GENERAL INFORMATION:
; APPLICANT: MASCIA, Peter
; APPLICANT: ALEXANDROV, Nickolai
; APPLICANT: BROVER, Vyacheslav
; TITLE OF INVENTION: NUCLEOTIDE SEQUENCES AND POLYPEPTIDES ENCODED THEREBY USEFUL FOR
; TITLE OF INVENTION: PLANT CHARACTERISTICS AND PHENOTYPES
; FILE REFERENCE: 2750-1602PUS2
; CURRENT APPLICATION NUMBER: US/11/172,740
; CURRENT FILING DATE: 2005-06-30
; PRIOR APPLICATION NUMBER: 60/583,621
; PRIOR FILING DATE: 2004-06-30
; PRIOR APPLICATION NUMBER: 60/584,829
; PRIOR FILING DATE: 2004-06-30
; PRIOR APPLICATION NUMBER: 60/584,800
; PRIOR FILING DATE: 2004-06-30
; NUMBER OF SEQ ID NOS: 2523
; SEQ ID NO 184
; LENGTH: 161
; TYPE: PRT
; ORGANISM: Glycine max
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION: (1)..(161)
; OTHER INFORMATION: Public GI no. 32165478
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION:
; OTHER INFORMATION: Utility: Useful for delaying flowering time
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION:
; OTHER INFORMATION: Utility: Useful for increasing chlorophyll and photosynthetic ca
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION:
; OTHER INFORMATION: Utility: Useful for making plants with increased biomass
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION:
; OTHER INFORMATION: Utility: Useful for making plants with increased biomass and fol
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION:
; OTHER INFORMATION: Utility: Useful for making smaller plants
; OTHER INFORMATION: Utility: Useful for making smaller plants
US-11-172-740-184

Query Match          42.2%; Score 73.5; DB 7; Length 161;
Best Local Similarity 45.2%; Pred. No. 0.0017;
Matches 14; Conservative 8; Mismatches 8; Indels 1; Gaps 1;

QY  2 GPGTIKKISFPEGFPFKYVKDRVDEVDHTN 31
    |||||
Db   50 GVGTVKQLNFTPGKKDFPFKIKRVDLDEEN 80
```

Result No.	Score	Query		Length	DB	ID	Description
		Match	%				
1	163	100.0	31	5	AB883633	AB883633	Bet v 1-d
2	154	94.5	80	8	ADR87217	ADR87217	Birch pol
3	154	94.5	153	8	ADR87230	ADR87230	Chimeric
4	154	94.5	153	8	ADR87232	ADR87232	Chimeric
5	154	94.5	159	2	AAV45216	AAV45216	Wild type
6	154	94.5	159	4	AEM00015	AEM00015	Major pol
7	154	94.5	159	5	ABG66960	ABG66960	Birch all
8	154	94.5	159	5	ABG67097	ABG67097	Birch all
9	154	94.5	159	5	ABG66961	ABG66961	Birch all
10	154	94.5	159	5	ABG66959	ABG66959	Birch all
11	154	94.5	159	5	ABG66969	ABG66969	Birch all
12	154	94.5	159	5	ABG67096	ABG67096	Birch all
13	154	94.5	159	5	ABG67093	ABG67093	Birch all
14	154	94.5	159	5	ABG66962	ABG66962	Birch all
15	154	94.5	159	5	ABG67050	ABG67050	Birch all
16	154	94.5	159	5	ABG66987	ABG66987	Birch all
17	154	94.5	159	5	ABG67102	ABG67102	Birch all
18	154	94.5	159	5	ABG66958	ABG66958	Birch all
19	154	94.5	159	5	ABG67095	ABG67095	Birch all
20	154	94.5	159	5	ABG67101	ABG67101	Birch all
21	154	94.5	159	5	ABG67105	ABG67105	Birch all
22	154	94.5	159	5	ABG67099	ABG67099	Birch all
23	154	94.5	159	5	ABG67100	ABG67100	Birch all
24	154	94.5	159	5	ABG66963	ABG66963	Birch all

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:43:45 ; Search time 15.9282 Seconds
(without alignments)
187.261 Million cell updates/sec

Title: US-10-026-911-4
Perfect score: 163
Sequence: 1 DGGSIKISKNYHTKGDHEVKAEQVKASKE 31

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues
Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_80.*
1: pir1.*
2: pir2.*
3: pir3.*
4: pir4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	154	94.5	160	2 S05376	major pollen aller
2	145	89.0	160	2 E55699	major pollen aller
3	145	89.0	160	2 G55699	major pollen aller
4	145	89.0	160	2 D55699	major pollen aller
5	143	87.7	160	2 C55699	major pollen aller
6	143	87.7	160	2 F55699	major pollen aller
7	143	87.7	160	2 I55699	major pollen aller
8	139	85.3	159	2 S47251	gene 1 Sc2 protein
9	139	85.3	160	2 S47250	gene 1-Sc1 protein
10	137	84.0	160	2 A57427	major pollen aller
11	137	84.0	160	2 H55699	major pollen aller
12	137	84.0	160	2 A55699	major pollen aller
13	129	79.1	160	2 B55699	major pollen aller
14	115	70.6	160	2 S30055	major allergen Cor
15	115	70.6	160	2 S30053	major allergen Cor
16	115	70.6	160	2 S30054	major allergen Cor
17	110	67.5	160	2 S30056	major allergen Cor
18	103	63.2	160	2 S47249	gene 1-Sc3 protein
19	102	62.6	160	2 T17005	major allergen Mal
20	102	62.6	160	2 T17006	major allergen Mal
21	94	57.7	160	2 T17007	major allergen Mal
22	87	53.4	159	2 T17004	major allergen Mal
23	80	49.1	155	1 SNFB2	pathogenesis-relat
24	80	49.1	155	2 T11670	pathogenesis-relat
25	79	48.5	157	2 S42649	pathogenesis-relat
26	78	47.9	94	2 T06417	pathogenesis-relat
27	77	47.2	153	2 S51119	MalDI protein - ap
28	76	46.6	111	2 T06418	pathogenesis-relat
29	76	46.6	158	2 T06527	pathogenesis-relat

30	74	45.4	155	2 S52664	pathogenesis-relat
31	74	45.4	156	1 SNFB1	pathogenesis-relat
32	73	44.8	154	2 S63984	major allergen Api
33	73	44.8	178	2 T07403	Ts1-1 protein - to
34	72	44.2	154	2 T14326	major allergen Dau
35	72	44.2	157	2 T09659	pathogenesis-relat
36	72	44.2	157	2 T09526	stress response ge
37	71.5	43.9	159	2 T06768	disease resistance
38	69	42.3	154	2 T14325	major allergen Dau
39	69	42.3	154	2 T14322	major root protein
40	69	42.3	154	2 T14356	major allergen Dau
41	69	42.3	168	2 T14301	pathogenesis-relat
42	68	41.7	158	2 S47140	pathogenesis-relat
43	68	41.7	159	2 JC4276	major allergen Mal
44	66	40.5	158	2 S20518	hypochemical prote
45	64	39.3	155	2 S35161	STH-2 protein - po

ALIGNMENTS

RESULT 1

S05376 major pollen allergen Bet v 1 - European white birch

C;Species: Betula pendula (European white birch)
C;Date: 31-Mar-1990 #sequence revision 31-Mar-1990 #text_change 09-Jul-2004

C;Accession: S05376; JC4834; B53288

R;Breiteneder, H.; Pettenburger, K.; Bito, A.; Valenta, R.; Kraft, D.; Rumpold, H.; Sch

EMBO J. 8, 1935-1938, 1989

A;Title: The gene coding for the major birch pollen allergen Betv1, is highly homologou

A;Reference number: S05376; MUID:90005395; PMID:2571499

A;Accession: S05376

A;Molecule type: mRNA

A;Residues: 1-160 <BRE>

A;Cross-references: UNIPROT:P15494; UNIPARC:UPI0000000314; EMBL:X15877; NID:gl7937; PID

R;Kungl, A.J.; Susani, M.; Lindemann, A.; Machius, M.; Viesser, A.J.W.G.; Scheiner, O.;

Biochem. Biophys. Res. Commun. 223, 187-192, 1996

A;Title: Evidence for an alpha helical T cell epitope in the C-terminus of the main bir

A;Reference number: JC4834; MUID:96254050; PMID:8660368

A;Accession: JC4834

A;Status: nucleic acid sequence not shown

A;Molecule type: mRNA

A;Residues: 1-160 <KUN>

A;Cross-references: UNIPARC:UPI0000000314

R;Ipsen, H.; Hansen, O.C.

Mol. Immunol. 28, 1279-1288, 1991

A;Title: The NH2-terminal amino acid sequence of the immunochemically partial identical

s) Car b 1 and oak (Quercus alba) Que a 1 pollens.

A;Reference number: A53288; MUID:92072607; PMID:1961201

A;Accession: B53288

A;Status: preliminary

A;Molecule type: protein

A;Residues: 2-39, 'XX', 42-44 <IPS>

A;Cross-references: UNIPARC:UPI00000177F58; PID:g2339734; PIDN:AAB20452.1

A;Experimental source: pollen

A;Note: sequence extracted from NCBI backbone (NCBIP:68408)

C;Comment: This protein induces IGE synthesis by B cells in a T cell dependent manner.

C;Superfamily: pathogenesis-related protein

C;Keywords: pollen

F;2-160/Product: major pollen allergen Bet v 1 #status experimental <MAT>

Query Match 94.5%; Score 154; DB 2; Length 160;

Best Local Similarity 100.0%; Pred. No. 1,1e-14;

Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 DGGSIKISKNYHTKGDHEVKAEQVKASKE 30

Db 110 DGGSIKISKNYHTKGDHEVKAEQVKASKE 139

RESULT 2

E55699

major pollen allergen Bet v 1f/i - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C:Accession: E55699; S41905; S41900
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography
A:Reference number: A55699; MUID:95155322; PMID:7852325
A:Accession: E55699
A:Molecule type: mRNA
A:Residues: 1-160 <SWO>
A:Cross-references: UNIPROT:P43179; UNIPARC:UPI000016DCP9; EMBL:X77269; NID:g452735; PID:G55699
A:Note: the source is designated as Betula verrucosa
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffmann-Sommergruber, K.; Heberle-Ritter, M.
Submitted to the EMBL Data Library, January 1994
A:Reference number: S41896
A:Accession: S41905
A>Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-160 <SW2>
A:Cross-references: UNIPARC:UPI000016DCP9; EMBL:X77274; NID:g452745; PIDN:CAA54490.1; PMID:G55699
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1f/i #status experimental <MAT>
Query Match 89.0%; Score 145; DB 2; Length 160;
Best Local Similarity 90.0%; Pred. No. 2.2e-13;
Matches 27; Conservative 3; Mismatches 0; Indels 0; Gaps 0;
QY 1 DGGSIKISNKYHTKGDHEVKAQVKASKE 30
Db 110 NGGSILKINKYHTKGDHEVKAQIKASKE 139
RESULT 3
G55699
major pollen allergen Bet v 1j - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C:Accession: G55699; S41902
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography
A:Reference number: A55699; MUID:95155322; PMID:7852325
A:Accession: G55699
A:Molecule type: mRNA
A:Residues: 1-160 <SWO>
A:Cross-references: UNIPROT:P43183; UNIPARC:UPI000016DCP9; EMBL:X77271; NID:g452739; PID:G55699
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1j #status experimental <MAT>
Query Match 89.0%; Score 145; DB 2; Length 160;
Best Local Similarity 90.0%; Pred. No. 2.2e-13;
Matches 27; Conservative 3; Mismatches 0; Indels 0; Gaps 0;
QY 1 DGGSIKISNKYHTKGDHEVKAQVKASKE 30
Db 110 NGGSILKINKYHTKGDHEVKAQIKASKE 139
RESULT 4
D55699
major pollen allergen Bet v 1e - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C:Accession: D55699; S41899
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.

J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography
A:Reference number: A55699; MUID:95155322; PMID:7852325
A:Accession: D55699
A:Molecule type: mRNA
A:Residues: 1-160 <SWO>
A:Cross-references: UNIPROT:P43178; UNIPARC:UPI000016DCP8; EMBL:X77267; NID:g452733; PID:G55699
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1e #status experimental <MAT>
Query Match 89.0%; Score 145; DB 2; Length 160;
Best Local Similarity 90.0%; Pred. No. 2.2e-13;
Matches 27; Conservative 3; Mismatches 0; Indels 0; Gaps 0;
QY 1 DGGSIKISNKYHTKGDHEVKAQVKASKE 30
Db 110 NGGSILKINKYHTKGDHEVKAQIKASKE 139
RESULT 5
C55699
major pollen allergen Bet v 1d/h - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C:Accession: C55699; S41901; S41898
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography
A:Reference number: A55699; MUID:95155322; PMID:7852325
A:Accession: C55699
A:Molecule type: mRNA
A:Residues: 1-160 <SWO>
A:Cross-references: UNIPROT:P43177; UNIPARC:UPI000016DCP7; EMBL:X77266; NID:g452731; PMID:G55699
A:Note: the source is designated as Betula verrucosa
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffmann-Sommergruber, K.; Heberle-Ritter, M.
Submitted to the EMBL Data Library, January 1994
A:Reference number: S41896
A:Accession: S41901
A>Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-160 <SW2>
A:Cross-references: UNIPARC:UPI000016DCP7; EMBL:X77270; NID:g452737; PIDN:CAA54486.1; PMID:G55699
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1d/h #status experimental <MAT>
F:83/Binding site: carbohydrate (Asn) (covalent) #status absent
Query Match 87.7%; Score 143; DB 2; Length 160;
Best Local Similarity 90.0%; Pred. No. 4.3e-13;
Matches 27; Conservative 2; Mismatches 1; Indels 0; Gaps 0;
QY 1 DGGSIKISNKYHTKGDHEVKAQVKASKE 30
Db 110 DGGCVLKISNKYHTKGNHEVKAQVKASKE 139
RESULT 6
F55699
major pollen allergen Bet v 1g - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C:Accession: F55699; S41896
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography
A:Reference number: A55699; MUID:95155322; PMID:7852325
A:Accession: F55699
A:Molecule type: mRNA

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:43:29 ; Search time 52.2376 Seconds
(without alignments)
418.691 Million cell updates/sec

Title: US-10-026-911-4
Perfect score: 163
Sequence: 1 DGGSLKISNKYHTKGDHEVKAQVKASKEC 31

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2166443 seqs, 705528306 residues

Total number of hits satisfying chosen parameters: 2166443

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries.

Database :

UniProt 05.80.*

1: uniprot_sprot.*

2: uniprot_trembl.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	154	94.5	159	1 BEVIA BETVE	P15494 betula verr
2	154	94.5	159	2 Q23748 BETVE	O23748 betula verr
3	154	94.5	159	2 Q546V0 BETVE	O546V0 betula verr
4	154	94.5	160	2 Q24642 BETVE	O24642 betula verr
5	154	94.5	160	2 Q42499 BETVE	Q42499 betula verr
6	154	94.5	160	2 Q23752 BETVE	O23752 betula verr
7	154	94.5	160	2 Q546U3 BETVE	O546U3 betula verr
8	154	94.5	160	2 Q96370 BETVE	Q96370 betula verr
9	154	94.5	160	2 Q96371 BETVE	Q96371 betula verr
10	154	94.5	160	2 Q96371 BETVE	Q96371 betula verr
11	154	94.5	160	2 Q96371 BETVE	Q96371 betula verr
12	154	94.5	160	2 Q96371 BETVE	Q96371 betula verr
13	153	93.9	160	2 Q96371 BETVE	Q96371 betula verr
14	149	91.4	160	2 Q96371 BETVE	Q96371 betula verr
15	149	91.4	160	2 Q96371 BETVE	Q96371 betula verr
16	148	90.8	160	2 Q23753 BETVE	O23753 betula verr
17	148	90.8	160	2 Q23754 BETVE	O23754 betula verr
18	148	90.8	160	2 Q96371 BETVE	Q96371 betula verr
19	145	89.0	159	1 BEVIA BETVE	P43178 betula verr
20	145	89.0	159	1 BEVIA BETVE	P43179 betula verr
21	145	89.0	159	1 BEVIA BETVE	P43183 betula verr
22	145	89.0	159	2 Q23750 BETVE	O23750 betula verr
23	145	89.0	160	2 Q39431 BETVE	Q39431 betula verr
24	143	87.7	159	1 BEVIA BETVE	P43177 betula verr
25	143	87.7	159	1 BEVIA BETVE	P43180 betula verr
26	143	87.7	159	1 BEVIA BETVE	P43185 betula verr
27	143	87.7	159	2 Q546V1 BETVE	O546V1 betula verr
28	143	87.7	160	2 Q23751 BETVE	O23751 betula verr
29	143	87.7	160	2 Q96365 BETVE	Q96365 betula verr
30	143	87.7	160	2 Q96367 BETVE	Q96367 betula verr
31	143	87.7	160	2 Q96368 BETVE	Q96368 betula verr

32	143	87.7	160	2 Q9AYS2_9ROSI	Q9AYS2 betula plat
33	143	87.7	160	2 Q9AYS3_9ROSI	Q9AYS3 betula plat
34	143	87.7	160	2 Q9AYS4_9ROSI	Q9AYS4 betula plat
35	143	87.7	160	2 Q9SCH5 BETVE	Q9SCH5 betula verr
36	143	87.7	160	2 Q9SCI0 BETVE	Q9SCI0 betula verr
37	143	87.7	160	2 Q9SCI13 BETVE	Q9SCI13 betula verr
38	143	87.7	160	2 Q9SYW0 BETVE	Q9SYW0 betula verr
39	143	87.7	160	2 Q9ZS38 BETVE	Q9ZS38 betula verr
40	139	85.3	159	2 Q39420 BETVE	Q39420 betula verr
41	139	85.3	160	2 Q39417 BETVE	Q39417 betula verr
42	139	85.3	160	2 Q9LEP0 BETVE	Q9LEP0 betula verr
43	138	84.7	159	2 Q23746 BETVE	Q23746 betula verr
44	137	84.0	159	1 BEVIB BETVE	P45431 betula verr
45	137	84.0	159	1 BEVIK BETVE	P43184 betula verr

ALIGNMENTS

RESULT 1
BEVIA BETVE
ID BEVIA BETVE STANDARD; PRT; 159 AA.
AC P15494; Q96369;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 10-MAY-2005 (Rel. 47, Last annotation update)
DE Major pollen allergen Bet v 1-A (Bet v 1-A).
GN Name=BETVIA; Synonyms=BETVI;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
OC rosids; eurosids I; Fagales; Betulaceae; Betula.
ON NCBI_TaxID=3505;
RX MEDLINE=90005395; PubMed=2571499;
RC TISSUE=Pollen;
RA Breiteneder H., Pottenburger K., Bito A., Valenta R., Kraft D.,
Rumpold H., Scheiner O., Breitenbach M.;
RT "The gene coding for the major birch pollen allergen Betv1, is highly
homologous to a pea disease resistance response gene";
RL EMBL J. 8:1935-1938(1989).
RN [2]
RN NUCLEOTIDE SEQUENCE.
RP NUCLEOTIDE SEQUENCE, AND PROTEIN SEQUENCE OF 1-34.
RC TISSUE=Pollen;
RA Breiteneder H., Pottenburger K., Bito A., Valenta R., Kraft D.,
Rumpold H., Scheiner O., Breitenbach M.;
RT "The gene coding for the major birch pollen allergen Betv1, is highly
homologous to a pea disease resistance response gene";
RL EMBL J. 8:1935-1938(1989).
RN [3]
RN NUCLEOTIDE SEQUENCE.
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pollen;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DBJ databases.
RN [4]
RN NUCLEOTIDE SEQUENCE.
RP TISSUE=Pollen;
RC MEDLINE=95155322; PubMed=7852325; DOI=10.1074/jbc.270.6.2607;
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
Vicente O., Heberle-Bors E., Alhorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
liquid chromatography, mass spectrometry, and cDNA cloning";
RL J. Biol. Chem. 270:2607-2613(1995).
RN [5]
RN PARTIAL PROTEIN SEQUENCE.
RP MEDLINE=91317572; PubMed=2101127;
RA Elsayed S., Vik H.;
RT "Purification and N-terminal amino acid sequence of two birch pollen
isoallergens (Bet v I and Bet v II).";
RL Int. Arch. Allergy Appl. Immunol. 93:378-384(1990).
RN [6]
RN X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS), AND STRUCTURE BY NMR.
RP MEDLINE=97102431; PubMed=8946858;
RA Gajhede M., Osmark P., Poulsen F.M., Ipsen H., Larsen J.N.,
van Neerven R.J.J., Schou C., Loewenstein H., Spangfort M.D.;
RT "X-ray and NMR structure of Bet v 1, the origin of birch pollen
allergy";
RL Nat. Struct. Biol. 3:1040-1045(1996).
CC -!- SUBCELLULAR LOCATION: Cytoplasmic.

CC -!- ALLERGEN: Causes an allergic reaction in human. Is a cause of type
 CC I allergic reactions in Europe, North America and USSR.
 CC -!- SIMILARITY: Belongs to the Betv1 family.

CC -----
 CC This Swiss-Prot entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use as long as its content is in no way modified and this statement is not
 CC removed.

CC -----
 CC EMBL; X15877; CAA33887.1; -; mRNA.
 CC EMBL; Z80098; CAB02153.1; -; mRNA.
 CC EMBL; Z80099; CAB02154.1; -; mRNA.
 CC EMBL; Z80104; CAB02159.1; -; mRNA.
 CC PIR; S05376; S05376.
 CC DR PDB; 1B6F; NMR; A=1-159.
 CC DR PDB; 1BTV; NMR; @=1-159.
 CC DR PDB; 1BVI; X-ray; @=1-159.
 CC DR PDB; 1FSK; X-ray; A/D/G/J=1-159.
 CC DR PDB; 1LLT; X-ray; A=1-159.
 CC DR PDB; 1QMR; X-ray; A=1-159.
 CC DR InterPro; IPR000916; Bet v 1.
 CC DR Pfam; PF00407; Bet v 1; I.
 CC DR PRINTS; PR00634; BETVALLERGEN.
 CC DR ProDom; PD000531; Bet_v_1; 1.
 CC DR PROSITE; PS00451; PATHOGENESIS BETV1; 1.
 CC KW 3D-structure; Allergen; Direct protein sequencing; Multigene family;
 CC Pathogenesis-related protein; Plant defense.
 CC FT INIT MET 0 0
 CC FT VARIANT 62 62 F -> L.
 CC FT STRAND 2 11
 CC FT HELIX 15 22
 CC FT TURN 23 25
 CC FT HELIX 26 33
 CC FT TURN 35 37
 CC FT TURN 40 45
 CC FT STRAND 50 51
 CC FT TURN 53 57
 CC FT STRAND 60 61
 CC FT TURN 66 75
 CC FT STRAND 76 79
 CC FT TURN 80 88
 CC FT STRAND 89 90
 CC FT TURN 92 92
 CC FT TURN 93 94
 CC FT STRAND 95 106
 CC FT TURN 108 109
 CC FT STRAND 112 122
 CC FT TURN 124 125
 CC FT HELIX 130 153
 CC FT TURN 155 159
 CC SQ SEQUENCE 159 AA; 17440 MW; 96E181194BBA83E6 CRC64;

Query Match 94.5%; Score 154; DB 1; Length 159;
 Best Local Similarity 100.0%; Pred. No. 1.7e-13;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DGGSIKISNKYHTKGDHEVKAQVKAKE 30
 |||||
 DB 109 DGGSIKISNKYHTKGDHEVKAQVKAKE 138

RESULT 2
 O23748 BETVE
 ID O23748 BETVE PRELIMINARY; PRT; 159 AA.
 AC O23748;
 DT 01-JAN-1998 (TrEMBLrel. 05, Created)
 DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
 DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
 DE Pollen allergen, Betv1 (Fragment).
 GN Name=Betv1;
 OS Betula verrucosa (White birch) (Betula pendula).
 OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
 OC Rosids; eurosids I; Fagales; Betulaceae; Betula.
 OC NCBI_TaxID=3505;
 RN [1]
 RP NUCLEOTIDE SEQUENCE.
 RC TISSUE=Leaves;
 RA Cvitanich C., Larsen J.N.;
 RL Submitted (SEP-1997) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AJ001555; CAA04827.1; -; Genomic DNA.
 DR HSSP; P15494; 1BVI.
 DR SMR; O23748; 1-159.
 DR GO; GO:0006952; P:defense response; IEA.
 DR InterPro; IPR000916; Bet v 1.
 DR Pfam; PF00407; Bet_v_1; I.
 DR PRINTS; PR00634; BETVALLERGEN.
 DR ProDom; PD000531; Bet v 1; 1.
 DR PROSITE; PS00451; PATHOGENESIS BETV1; 1.
 KW Pathogenesis-related protein; Plant defense.
 FT NON_TER 1
 FT SEQUENCE 159 AA; 17318 MW; E4A52944075407CE CRC64;

Query Match 94.5%; Score 154; DB 2; Length 159;
 Best Local Similarity 100.0%; Pred. No. 1.7e-13;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DGGSIKISNKYHTKGDHEVKAQVKAKE 30
 |||||
 DB 109 DGGSIKISNKYHTKGDHEVKAQVKAKE 138

RESULT 3
 Q546V0 BETVE
 ID Q546V0 BETVE PRELIMINARY; PRT; 159 AA.
 AC Q546V0;
 DT 13-SEP-2005 (TrEMBLrel. 31, Created)
 DT 13-SEP-2005 (TrEMBLrel. 31, Last sequence update)
 DT 13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
 DE Pollen allergen, Betv1 (Fragment).
 GN Name=Betv1;
 OS Betula verrucosa (White birch) (Betula pendula).
 OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
 OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
 OC Rosids; eurosids I; Fagales; Betulaceae; Betula.
 OC NCBI_TaxID=3505;
 RN [1]
 RP NUCLEOTIDE SEQUENCE.
 RC TISSUE=Leaves;
 RA Cvitanich C., Larsen J.N.;
 RT "Studies of Bet v 1 gene polymorphism using chromosomal DNA from
 RT individual plants.";
 RL Submitted (SEP-1997) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AJ001553; CAA04825.1; -; Genomic DNA.
 KW Pathogenesis-related protein; Plant defense.
 FT NON_TER 1
 FT SEQUENCE 159 AA; 17440 MW; 96E181194BBA83E6 CRC64;

Query Match 94.5%; Score 154; DB 2; Length 159;
 Best Local Similarity 100.0%; Pred. No. 1.7e-13;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DGGSIKISNKYHTKGDHEVKAQVKAKE 30
 |||||
 DB 109 DGGSIKISNKYHTKGDHEVKAQVKAKE 138

RESULT 4
 O24642 BETVE
 ID O24642 BETVE PRELIMINARY; PRT; 160 AA.
 AC O24642;
 DT 01-JAN-1998 (TrEMBLrel. 05, Created)
 DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
 DT 01-FEB-2005 (TrEMBLrel. 29, Last annotation update)
 DE Pollen allergen Betv1.

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:44:15 ; Search time 24.4917 Seconds
(without alignments)
104.645 Million cell updates/sec

Title: US-10-026-911-4
Perfect score: 163
Sequence: 1 DGGSLKISNKYHTKGDHEVKAQVKASKEC 31

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 572060 seqs, 82675679 residues

Total number of hits satisfying chosen parameters: 572060

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued Patents AA.*
1: /cgn2_6/ptodata/1/iaa/5_COMB.pep.*
2: /cgn2_6/ptodata/1/iaa/6_COMB.pep.*
3: /cgn2_6/ptodata/1/iaa/H_COMB.pep.*
4: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep.*
5: /cgn2_6/ptodata/1/iaa/RE_COMB.pep.*
6: /cgn2_6/ptodata/1/iaa/backfiles.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	154	94.5	160	1	US-07-847-010-23
2	134	82.2	160	1	US-07-847-010-3
3	115	70.6	160	1	US-07-847-010-11
4	115	70.6	160	1	US-07-847-010-14
5	115	70.6	160	1	US-07-847-010-17
6	110	67.5	160	1	US-07-847-010-20
7	74	45.4	158	6	5312912-2
8	72	44.2	158	2	US-08-964-722-2
9	69	42.3	154	1	US-08-363-010-1
10	69	42.3	154	1	US-08-911-434A-4
11	56	34.4	212	2	US-10-192-353-3
12	56	34.4	248	2	US-10-192-353-4
13	54.5	33.4	121	2	US-09-621-976-4237
14	54	33.1	43	2	US-10-318-675-53
15	52.5	32.2	504	2	US-09-231-529-6
16	52.5	32.2	504	2	US-08-977-816-6
17	52.5	32.2	516	2	US-09-949-016-9654
18	52	31.9	225	2	US-09-107-532A-4090
19	51.5	31.6	416	2	US-08-910-505-2
20	51.5	31.6	416	2	US-08-910-505-4
21	51.5	31.6	416	2	US-09-493-459-2
22	51.5	31.6	416	2	US-09-493-459-4
23	50	30.7	64	2	US-09-270-767-62057
24	50	30.7	66	2	US-09-583-110-5229
25	50	30.7	66	2	US-09-107-433-4485
26	49	30.1	160	2	US-09-257-583-11
27	49	30.1	472	2	US-09-266-965-128

28	48	29.4	1612	1	US-08-169-927-2
29	47.5	29.1	517	2	US-09-457-040B-14
30	47	28.8	66	2	US-09-252-991A-29174
31	47	28.8	98	2	US-08-563-524A-2
32	47	28.8	361	2	US-09-538-092-335
33	47	28.8	674	1	US-08-803-973-7
34	47	28.8	674	1	US-08-803-972-7
35	47	28.8	707	1	US-08-803-973-12
36	47	28.8	707	1	US-08-803-972-12
37	47	28.8	1456	1	US-08-803-973-2
38	47	28.8	1456	1	US-08-803-972-2
39	47	28.8	4861	2	US-09-919-497-70
40	46.5	28.5	1004	2	US-09-268-347-30
41	46.5	28.5	1094	2	US-09-268-347-32
42	46.5	28.5	1104	2	US-09-268-347-28
43	46.5	28.5	1104	2	US-09-268-347-34
44	46	28.2	194	2	US-09-107-433-4014
45	46	28.2	391	2	US-09-328-352-7217

ALIGNMENTS

RESULT 1
US-07-847-010-23
; Sequence 23, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hofmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM: disk
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 23:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:

```
; ORGANISM: birch (Betula sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERCON AB, ENGELHOLM, SWEDEN
US-07-847-010-23

Query Match          94.5%; Score 154; DB 1; Length 160;
Best Local Similarity 100.0%; Pred. No. 3e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DGSILKISKNYHTKGDHEVKAEQVSKASKE 30
    |||||
Db 110 DGSILKISKNYHTKGDHEVKAEQVSKASKE 139

RESULT 2
US-07-847-010-3
; Sequence 3, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: Alder (Alnus sp.)
US-07-847-010-3

Query Match          82.2%; Score 134; DB 1; Length 160;
Best Local Similarity 80.0%; Pred. No. 2.9e-12;
Matches 24; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 DGSILKISKNYHTKGDHEVKAEQVSKASKE 30
    |||||
```

```
Db 110 DGSILKISKNYHTKGDHEVNAEQIKIEKE 139

RESULT 3
US-07-847-010-11
; Sequence 11, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 11:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERCON AB, ENGELHOLM, SWEDEN
US-07-847-010-11

Query Match          70.6%; Score 115; DB 1; Length 160;
Best Local Similarity 69.0%; Pred. No. 2e-09;
Matches 20; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

QY 2 GGSILKISKNYHTKGDHEVKAEQVSKASKE 30
    |||||
Db 111 GGSILKISKNYHTKGDHEVNAEQIKIEKE 139

RESULT 4
US-07-847-010-14
; Sequence 14, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
```

Result No.	Score	Query		DB	ID	Description
		Match	Length			
1	163	100.0	31	4	US-10-026-911-4	Sequence 4, Appli
2	154	94.5	80	5	US-10-799-514-6	Sequence 6, Appli
3	154	94.5	153	5	US-10-799-514-19	Sequence 19, Appl
4	154	94.5	153	5	US-10-799-514-21	Sequence 21, Appl
5	154	94.5	159	3	US-09-981-009B-1	Sequence 1, Appli
6	154	94.5	159	3	US-09-847-208-34	Sequence 34, Appl
7	154	94.5	159	3	US-09-957-806A-6	Sequence 6, Appli
8	154	94.5	159	4	US-10-001-245-3	Sequence 3, Appli
9	154	94.5	159	4	US-10-001-245-5	Sequence 5, Appli
10	154	94.5	159	4	US-10-001-245-92	Sequence 92, Appl
11	154	94.5	159	4	US-10-719-553-37	Sequence 37, Appl
12	154	94.5	159	4	US-10-698-855-5	Sequence 5, Appli
13	154	94.5	160	4	US-10-001-245-1	Sequence 1, Appli
14	154	94.5	160	4	US-10-001-245-6	Sequence 6, Appli
15	154	94.5	160	4	US-10-440-516-1	Sequence 1, Appli
16	154	94.5	160	4	US-10-440-516-2	Sequence 2, Appli
17	154	94.5	160	4	US-10-440-516-6	Sequence 6, Appli
18	154	94.5	160	5	US-10-799-514-7	Sequence 7, Appli
19	154	94.5	160	5	US-10-809-689-87	Sequence 87, Appl
20	150	92.0	159	4	US-10-001-245-4	Sequence 4, Appli
21	150	92.0	160	4	US-10-001-245-7	Sequence 7, Appli
22	150	92.0	160	4	US-10-440-516-3	Sequence 3, Appli
23	150	92.0	160	4	US-10-440-516-4	Sequence 4, Appli
24	150	92.0	160	4	US-10-440-516-7	Sequence 7, Appli
25	145	89.0	159	3	US-09-847-208-37	Sequence 37, Appl
26	145	89.0	159	3	US-09-847-208-38	Sequence 38, Appl
27	145	89.0	159	3	US-09-847-208-40	Sequence 40, Appl

```

; SEQ ID NO 6
; LENGTH: 80
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic Peptide
US-10-799-514-6

Query Match          94.5%; Score 154; DB 5; Length 80;
Best Local Similarity 100.0%; Pred. No. 9.1e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  1 DGGSLIKISNKYHTKGDHEVKAEQVKASKE 30
    |||
Db   30 DGGSLIKISNKYHTKGDHEVKAEQVKASKE 59

RESULT 3
US-10-799-514-19
; Sequence 19, Application US/10799514
; Publication No. US20040241178A1
; GENERAL INFORMATION:
; APPLICANT: Spertini, Francois
; APPLICANT: Cortesey, Blaise
; TITLE OF INVENTION: Allergen Peptide Fragments and Use Thereof
; FILE REFERENCE: 25720-502
; CURRENT APPLICATION NUMBER: US/10/799,514
; CURRENT FILING DATE: 2004-03-12
; PRIOR APPLICATION NUMBER: 60/455,004
; PRIOR FILING DATE: 2003-03-14
; NUMBER OF SEQ ID NOS: 23
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 19
; LENGTH: 153
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic Peptide
US-10-799-514-19

Query Match          94.5%; Score 154; DB 5; Length 153;
Best Local Similarity 100.0%; Pred. No. 1.9e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  1 DGGSLIKISNKYHTKGDHEVKAEQVKASKE 30
    |||
Db   103 DGGSLIKISNKYHTKGDHEVKAEQVKASKE 132

RESULT 4
US-10-799-514-21
; Sequence 21, Application US/10799514
; Publication No. US20040241178A1
; GENERAL INFORMATION:
; APPLICANT: Spertini, Francois
; APPLICANT: Cortesey, Blaise
; TITLE OF INVENTION: Allergen Peptide Fragments and Use Thereof
; FILE REFERENCE: 25720-502
; CURRENT APPLICATION NUMBER: US/10/799,514
; CURRENT FILING DATE: 2004-03-12
; PRIOR APPLICATION NUMBER: 60/455,004
; PRIOR FILING DATE: 2003-03-14
; NUMBER OF SEQ ID NOS: 23
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 21
; LENGTH: 153
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic Peptide
US-10-799-514-21
```

```

US-10-799-514-21

Query Match          94.5%; Score 154; DB 5; Length 153;
Best Local Similarity 100.0%; Pred. No. 1.9e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  1 DGGSLIKISNKYHTKGDHEVKAEQVKASKE 30
    |||
Db   30 DGGSLIKISNKYHTKGDHEVKAEQVKASKE 59

RESULT 5
US-09-981-009B-1
; Sequence 1, Application US/09981009B
; Publication No. US200300411354A1
; GENERAL INFORMATION:
; APPLICANT: Kjaerulff, Soren
; APPLICANT: Roggen, Erwin
; TITLE OF INVENTION: Transgenic Plants
; FILE REFERENCE: 10082.200-US
; CURRENT APPLICATION NUMBER: US/09/981,009B
; CURRENT FILING DATE: 2002-06-14
; NUMBER OF SEQ ID NOS: 5
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula pendula
US-09-981-009B-1

Query Match          94.5%; Score 154; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 2e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  1 DGGSLIKISNKYHTKGDHEVKAEQVKASKE 30
    |||
Db   109 DGGSLIKISNKYHTKGDHEVKAEQVKASKE 138

RESULT 6
US-09-847-208-34
; Sequence 34, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
; APPLICANT: Zhu, Daocheng
; TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
; TITLE OF INVENTION: IGE-MEDIATED ALLERGIC DISEASES
; FILE REFERENCE: UC67.002A
; CURRENT APPLICATION NUMBER: US/09/847,208
; CURRENT FILING DATE: 2001-05-01
; NUMBER OF SEQ ID NOS: 177
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 34
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa (White birch) (Betula pendula)
US-09-847-208-34

Query Match          94.5%; Score 154; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 2e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  1 DGGSLIKISNKYHTKGDHEVKAEQVKASKE 30
    |||
Db   109 DGGSLIKISNKYHTKGDHEVKAEQVKASKE 138

RESULT 7
US-09-957-806A-6
; Sequence 6, Application US/09957806A
; Publication No. US20050181446A1
```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 10:05:54 ; Search time 6.85083 Seconds
(without alignments)
192.264 Million cell updates/sec

Title: US-10-026-911-4
Perfect score: 163
Sequence: 1 DGSILKISNKYHTKGDHEVKAEQVKASKEC 31

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 217505 seqs, 42489236 residues

Total number of hits satisfying chosen parameters: 217505

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Published Applications AA New:*
1: /SIDSS5/ptodata/1/pubpaa/US08_NEW_PUB.pep.*
2: /SIDSS5/ptodata/1/pubpaa/US06_NEW_PUB.pep.*
3: /SIDSS5/ptodata/1/pubpaa/US07_NEW_PUB.pep.*
4: /SIDSS5/ptodata/1/pubpaa/PCT_NEW_PUB.pep.*
5: /SIDSS5/ptodata/1/pubpaa/US09_NEW_PUB.pep.*
6: /SIDSS5/ptodata/1/pubpaa/US10_NEW_PUB.pep.*
7: /SIDSS5/ptodata/1/pubpaa/US11_NEW_PUB.pep.*
8: /SIDSS5/ptodata/1/pubpaa/US60_NEW_PUB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	154	94.5	160	6	US-10-498-026-81
2	154	94.5	172	7	US-11-102-883-18
3	154	94.5	289	7	US-11-102-883-26
4	154	94.5	300	7	US-11-102-883-6
5	73	44.8	283	7	US-11-102-883-32
6	73	44.8	294	7	US-11-102-883-30
7	54	33.1	432	6	US-10-957-887B-183
8	54	33.1	432	7	US-11-194-246-308
9	53	32.5	180	7	US-11-096-568A-10856
10	53	32.5	190	7	US-11-096-568A-10855
11	53	32.5	202	7	US-11-096-568A-10854
12	52.5	32.2	504	7	US-11-227-543-13
13	51	31.3	618	6	US-10-523-912-4
14	51	31.3	1933	6	US-10-523-912-2
15	50.5	31.0	494	7	US-11-087-099-9605
16	50	30.7	203	7	US-11-079-463-6672
17	48	29.4	1643	7	US-11-052-554A-172
18	47.5	29.1	157	7	US-11-172-740-1191
19	47	28.8	368	7	US-11-087-099-8464
20	47	28.8	667	7	US-11-188-298-7578
21	46.5	28.5	493	7	US-11-087-099-9453
22	46	28.2	397	7	US-11-143-980-51
23	46	28.2	462	7	US-11-087-099-8525
24	46	28.2	8746	7	US-11-098-686-10232
25	45.5	27.9	494	7	US-11-087-099-5764

Sequence 7715, Ap
Sequence 1806, Ap
Sequence 535, App
Sequence 534, App
Sequence 4, Appli
Sequence 3846, Ap
Sequence 3845, Ap
Sequence 3844, Ap
Sequence 23357, A
Sequence 23356, A
Sequence 23355, A
Sequence 38, Appl
Sequence 410, App
Sequence 12363, A
Sequence 6188, Ap
Sequence 4407, Ap
Sequence 194, App
Sequence 30718, A
Sequence 30717, A
Sequence 1192, Ap

26 45.5 27.9 572 7 US-11-188-298-7715
27 45 27.6 140 6 US-10-793-626-1806
28 45 27.6 269 6 US-10-995-561-535
29 45 27.6 303 6 US-10-995-561-534
30 45 27.6 1211 7 US-11-186-284-4
31 44.5 27.3 413 7 US-11-096-568A-3846
32 44.5 27.3 466 7 US-11-096-568A-3845
33 44.5 27.3 615 7 US-11-096-568A-23357
34 44 27.0 414 7 US-11-096-568A-23356
35 44 27.0 430 7 US-11-096-568A-23355
36 44 27.0 475 7 US-11-096-568A-23355
37 44 27.0 484 6 US-10-873-528-38
38 44 27.0 497 6 US-10-454-437-410
39 44 27.0 637 7 US-11-087-099-12363
40 44 27.0 659 7 US-11-079-463-6188
41 44 27.0 820 7 US-11-087-099-4407
42 44 27.0 826 6 US-10-873-528-194
43 44 27.0 872 7 US-11-096-568A-30718
44 44 27.0 905 7 US-11-096-568A-30717
45 43.5 26.7 154 7 US-11-172-740-1192

ALIGNMENTS

RESULT 1
US-10-498-026-81
; Sequence 81, Application US/10498026
; Publication No. US20060024334A1
; GENERAL INFORMATION:
; APPLICANT: CIRCASSIA LIMITED
; TITLE OF INVENTION: IMMUNOTHERAPEUTIC METHODS AND SYSTEMS
; FILE REFERENCE: N.87430 WO GCW
; CURRENT APPLICATION NUMBER: US/10/498,026
; CURRENT FILING DATE: 2004-06-04
; NUMBER OF SEQ ID NOS: 118
; SOFTWARE: Patent in version 3.1
; SEQ ID NO 81
; LENGTH: 160
; TYPE: PRT
; ORGANISM: Betula pendula
US-10-498-026-81

Query Match 94.5%; Score 154; DB 6; Length 160;
Best Local Similarity 100.0%; Pred. No. 1.1e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 DGSILKISNKYHTKGDHEVKAEQVKASKE 30
Db 110 DGSILKISNKYHTKGDHEVKAEQVKASKE 139

RESULT 2
US-11-102-883-18
; Sequence 18, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lamping, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods an
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: Patent in version 3.2

```
; SEQ ID NO 18
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Betula verrucosa
US-11-102-883-18

Query Match          94.5%; Score 154; DB 7; Length 172;
Best Local Similarity 100.0%; Pred. No. 1.2e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DGGSIKISNKYHTKGDHEVKAEQVKASKE 30
    |||||
Db 122 DGGSIKISNKYHTKGDHEVKAEQVKASKE 151

RESULT 3
US-11-102-883-26
; Sequence 26, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lampung, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; PRIOR FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 26
; LENGTH: 289
; TYPE: PRT
; ORGANISM: tat-11-bet v 1
US-11-102-883-26

Query Match          94.5%; Score 154; DB 7; Length 289;
Best Local Similarity 100.0%; Pred. No. 2.2e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DGGSIKISNKYHTKGDHEVKAEQVKASKE 30
    |||||
Db 239 DGGSIKISNKYHTKGDHEVKAEQVKASKE 268

RESULT 4
US-11-102-883-6
; Sequence 6, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lampung, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; PRIOR FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 6
```

```
; LENGTH: 300
; TYPE: PRT
; ORGANISM: Human immunodeficiency virus + Homo sapiens + Betula verrucosa
US-11-102-883-6

Query Match          94.5%; Score 154; DB 7; Length 300;
Best Local Similarity 100.0%; Pred. No. 2.3e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DGGSIKISNKYHTKGDHEVKAEQVKASKE 30
    |||||
Db 250 DGGSIKISNKYHTKGDHEVKAEQVKASKE 279

RESULT 5
US-11-102-883-32
; Sequence 32, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lampung, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; PRIOR FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 32
; LENGTH: 283
; TYPE: PRT
; ORGANISM: tat-11-api g 1
US-11-102-883-32

Query Match          44.8%; Score 73; DB 7; Length 283;
Best Local Similarity 50.0%; Pred. No. 0.0028;
Matches 15; Conservative 4; Mismatches 11; Indels 0; Gaps 0;

QY 1 DGGSIKISNKYHTKGDHEVKAEQVKASKE 30
    |||||
Db 238 DGGSIKTTAIFHTKGDVAVPEENIKYANE 267

RESULT 6
US-11-102-883-30
; Sequence 30, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lampung, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; PRIOR FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 30
; LENGTH: 294
```


GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:42:18 ; Search time 48.442 Seconds
(without alignments)
290.247 Million cell updates/sec

Title: US-10-026-911-5

Perfect score: 160

Sequence: 1 CKAEOVKASKEMGETLLRAVESYLLAHSADYN 32

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2443163 seqs, 439378781 residues

Total number of hits satisfying chosen parameters: 2443163

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

A_Geneseq_21.*
1: Geneseq1980s.*
2: Geneseq1990s.*
3: Geneseq2000s.*
4: Geneseq2001s.*
5: Geneseq2002s.*
6: Geneseq2003as.*
7: Geneseq2003bs.*
8: Geneseq2004s.*
9: Geneseq2005s.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	160	100.0	32	5	Abb83634 Bet v 1-d
2	151	94.4	80	8	Adr87217 Birch pol
3	151	94.4	153	8	Adr87230 Chimeric
4	151	94.4	153	8	Adr87232 Chimeric
5	151	94.4	159	2	Aay45216 Wild type
6	151	94.4	159	4	Abm00015 Major pol
7	151	94.4	159	5	Abg66960 Birch all
8	151	94.4	159	5	Abg66966 Birch all
9	151	94.4	159	5	Abg67097 Birch all
10	151	94.4	159	5	Abg66961 Birch all
11	151	94.4	159	5	Abg66959 Birch all
12	151	94.4	159	5	Abg67096 Birch all
13	151	94.4	159	5	Abg67093 Birch all
14	151	94.4	159	5	Abg66962 Birch all
15	151	94.4	159	5	Abg67050 Birch all
16	151	94.4	159	5	Abg66964 Birch all
17	151	94.4	159	5	Abg67102 Birch all
18	151	94.4	159	5	Abg66958 Birch all
19	151	94.4	159	5	Abg67095 Birch all
20	151	94.4	159	5	Abg67101 Birch all
21	151	94.4	159	5	Abg67105 Birch all
22	151	94.4	159	5	Abg66965 Birch all
23	151	94.4	159	5	Abg67099 Birch all
24	151	94.4	159	5	Abg67100 Birch all

25	151	94.4	159	5	ABG66963	Abg66963 Birch all
26	151	94.4	159	5	ABG67098	Abg67098 Birch all
27	151	94.4	159	5	ABG67106	Abg67106 Birch all
28	151	94.4	159	5	ABG67094	Abg67094 Birch all
29	151	94.4	159	5	ABB84185	Abb84185 Birch pol
30	151	94.4	159	8	ADF51233	Adf51233 Bet v 1 a
31	151	94.4	160	2	AAR04605	Aar04605 Major Bir
32	151	94.4	160	2	AAR21796	Aar21796 Bet v 1 a
33	151	94.4	160	2	AAZ25649	Aay25649 Betula sp
34	151	94.4	160	5	ABG66970	Abg66970 Birch all
35	151	94.4	160	7	ADC34898	Adc34898 Tree alle
36	151	94.4	160	8	ADF51168	Adf51168 Bet v 1 a
37	151	94.4	160	8	ADQ14386	Adq14386 Birch pol
38	151	94.4	160	8	ADR87218	Adr87218 Birch pol
39	151	94.4	160	8	ADS52093	Ads52093 Birch pol
40	151	94.4	160	8	ADSI4364	Adsi4364 Birch pol
41	151	94.4	172	8	ADM57312	Adm57312 Modular a
42	151	94.4	221	9	AEA81084	Aea81084 Grass/Bir
43	151	94.4	222	9	AEA81086	Aea81086 Grass/Bir
44	151	94.4	225	9	AEA81085	Aea81085 Birch/Gra
45	151	94.4	300	8	ADM57300	Adm57300 Modular a

ALIGNMENTS

RESULT 1
ABB83634
ID ABB83634 standard; peptide; 32 AA.
XX
AC ABB83634;
XX
DT 10-OCT-2002 (first entry)
XX
DE Bet v 1-derived synthetic peptide #5.
XX
KW Non-allergenic; Bet v 1-derived peptide; allergy.
XX
OS Synthetic.
XX
PN EP1219299-A1.
XX
PD 03-JUL-2002.
XX
PF 28-DEC-2000; 2000EP-00128659.
XX
PR 28-DEC-2000; 2000EP-00128659.
XX
PA (SHAN-) SHAN BET-GES MBH.
XX
PI Focke M, Mahler V, Sperr WR, Valent P, Kraft D, Valenta R;
XX
DR WPI; 2002-559804/60.
XX
PT Allergy vaccines comprise a peptide containing 8 to 50 amino acids.
XX
PS Example 1; Page 6; 27pp; English.
XX
CC The present invention relates to a new composition containing
CC anti-allergic peptides useful in the treatment of allergic diseases. The
CC present peptide is an non-allergenic Bet v 1-derived synthetic peptide,
CC which stimulate Bet v 1-specific human T-cells
XX
SQ Sequence 32 AA;
Query Match 100.0%; Score 160; DB 5; Length 32;
Best Local Similarity 100.0%; Pred. No. 6.3e-17;
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 CKAEOVKASKEMGETLLRAVESYLLAHSADYN 32
DB 1 CKAEOVKASKEMGETLLRAVESYLLAHSADYN 32

```

RESULT 2
ADR87217
ID   ADR87217 standard; protein; 80 AA.
AC
AC   ADR87217;
XX
XX   16-DEC-2004 (first entry)
DT
XX
XX   Birch pollen allergen Bet v 1 fragment SEQ ID NO:6.
DE
XX
XX   birch pollen; allergen; Bet v 1; T-cell response; IgE; immunoglobulin E;
KW   immune response; antiallergic; gene therapy; vaccine.
XX
XX   Betula sp.
OS
XX
XX   WO2004081028-A2.
PN
XX
XX   23-SEP-2004.
PD
XX
XX   15-MAR-2004; 2004WO-IB001300.
PF
XX
XX   14-MAR-2003; 2003US-0455004P.
PR
XX
XX   12-MAR-2004; 2004US-00799514.
XX
XX   (UYLA-) UNIV LAUSANNE.
PA
XX
XX   Spertini F;
PI
XX
XX   WPI; 2004-668931/65.
DR
XX
XX   New compositions including contiguous overlapping peptide fragments that
PT   form an entire amino acid sequence of an allergen (e.g. bee venom or
PT   birch pollen allergen), useful for preventing or treating IgE-mediated
PT   allergies.
XX
XX   Claim 2; SEQ ID NO 6; 82pp; English.
XX
XX   The invention relates to novel compositions including contiguous
CC   overlapping peptide fragments which together form an entire amino acid
CC   sequence of an allergen, where the fragments are capable of inducing a T-
CC   cell response in patients who are hypersensitive to the allergen. The
CC   contiguous overlapping peptide fragments further result in lower levels
CC   of IgE stimulation activity. The lower levels of IgE stimulation activity
CC   result in a decrease in T-cell response upon subsequent exposure to the
CC   allergen, thus, modulating an immune response in the patients, who are
CC   hypersensitive to the allergen. A composition of the invention has
CC   antiallergic activity, and may have a use in gene therapy, and as a
CC   vaccine. The composition and methods are useful for preventing or
CC   treating IgE-mediated allergies. The present sequence represents a
CC   fragment of an allergen of the invention, birch pollen Bet v 1.
XX
XX   Sequence 80 AA;
SQ
XX
XX   Query Match          94.4%; Score 151; DB 8; Length 80;
XX   Best Local Similarity 100.0%; Pred. No. 4.5e-15;
XX   Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX   QY      2 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 32
XX          |||||
XX   DB      50 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 80
XX
XX   RESULT 3
XX   ADR87230
XX   ID   ADR87230 standard; protein; 153 AA.
XX
XX   ADR87230;
XX
XX   16-DEC-2004 (first entry)
DT
XX
XX   Chimeric birch pollen allergen protein SEQ ID NO:19.
DE
XX
XX   birch pollen; Bet v 1; allergen; T-cell response; IgE; immunoglobulin E;
KW   immune response; antiallergic; gene therapy; vaccine; Bet v 2; profilin.
XX
XX   Betula sp.
OS
XX
XX   Chimeric.
XX
XX   Key          Location/Qualifiers
XX   Region      1..73
XX   /note= "Bet v 2 fragment"
FT
XX   Region      74..153
XX   /note= "Bet v 1 fragment"
FT
XX
XX   WO2004081028-A2.
PN
XX
XX   23-SEP-2004.
PD
XX
XX   15-MAR-2004; 2004WO-IB001300.
PF
XX
XX   14-MAR-2003; 2003US-0455004P.
PR
XX
XX   12-MAR-2004; 2004US-00799514.
XX
XX   (UYLA-) UNIV LAUSANNE.
PA
XX
XX   Spertini F;
PI
XX
XX   WPI; 2004-668931/65.
DR
XX
XX   New compositions including contiguous overlapping peptide fragments that
PT   form an entire amino acid sequence of an allergen (e.g. bee venom or
PT   birch pollen allergen), useful for preventing or treating IgE-mediated
PT   allergies.
XX
XX   Claim 7; SEQ ID NO 19; 82pp; English.
XX
XX   The invention relates to novel compositions including contiguous
CC   overlapping peptide fragments which together form an entire amino acid
CC   sequence of an allergen, where the fragments are capable of inducing a T-
CC   cell response in patients who are hypersensitive to the allergen. The
CC   contiguous overlapping peptide fragments further result in lower levels
CC   of IgE stimulation activity. The lower levels of IgE stimulation activity
CC   are zero or weak. The contiguous overlapping peptide fragments further
CC   result in a decrease in T-cell response upon subsequent exposure to the
CC   allergen, thus, modulating an immune response in the patients, who are
CC   hypersensitive to the allergen. A composition of the invention has
CC   antiallergic activity, and may have a use in gene therapy, and as a
CC   vaccine. The composition and methods are useful for preventing or
CC   treating IgE-mediated allergies. The present sequence represents a
CC   chimeric protein, composed of fragments of the birch pollen allergens
CC   profilin Bet v 2 and Bet v 1.
XX
XX   Sequence 153 AA;
SQ
XX
XX   Query Match          94.4%; Score 151; DB 8; Length 153;
XX   Best Local Similarity 100.0%; Pred. No. 9.8e-15;
XX   Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX   QY      2 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 32
XX          |||||
XX   DB      123 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 153
XX
XX   RESULT 4
XX   ADR87232
XX   ID   ADR87232 standard; protein; 153 AA.
XX
XX   ADR87232;
XX
XX   16-DEC-2004 (first entry)
DT
XX
XX   Chimeric birch pollen allergen protein SEQ ID NO:21.
DE
XX
XX   birch pollen; Bet v 1; allergen; T-cell response; IgE; immunoglobulin E;
```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:43:45 ; Search time 16.442 Seconds
(without alignments)
187.261 Million cell updates/sec

Title: US-10-026-911-5
Perfect score: 160
Sequence: 1 CKAQVKASKEMGETLLRAVESYLLAHSDAYN 32

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues
Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR 80.*
1: pir1.*
2: pir2.*
3: pir3.*
4: pir4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	151	94.4	160	2 C55699	major pollen aller
2	151	94.4	160	2 F55699	major pollen aller
3	151	94.4	160	2 F55699	major pollen aller
4	151	94.4	160	2 S05376	major pollen aller
5	150	93.8	160	2 B55699	major pollen aller
6	150	93.8	160	2 G55699	major pollen aller
7	150	93.8	160	2 D55699	major pollen aller
8	129	80.6	159	2 S47251	gene 1 Sc2 protein
9	129	80.6	160	2 S47250	gene 1-Sc1 protein
10	126	78.8	160	2 A57427	major pollen aller
11	126	78.8	160	2 H55699	major pollen aller
12	126	78.8	160	2 A55699	major pollen aller
13	126	78.8	160	2 B55699	major pollen aller
14	105	65.6	160	2 S30056	major allergen Cor
15	105	65.6	160	2 S30055	major allergen Cor
16	105	65.6	160	2 S30053	major allergen Cor
17	105	65.6	160	2 S30054	major allergen Cor
18	97	60.6	159	2 T17004	major allergen Mal
19	95	59.4	160	2 T17007	major allergen Mal
20	95	59.4	160	2 T17005	major allergen Mal
21	95	59.4	160	2 T17006	major allergen Mal
22	92	57.5	160	2 S47249	gene 1-Sc3 protein
23	87	54.4	159	2 JC4276	major allergen Mal
24	79	49.4	153	2 S51119	Mald1 protein - ap
25	70.5	44.1	158	2 T06527	pathogenesis-relat
26	70.5	44.1	159	2 T06768	disease resistance
27	68.5	42.8	111	2 T06418	pathogenesis-relat
28	68.5	42.8	158	2 S20518	hypothetical prote
29	65.5	40.9	161	2 T14817	pathogenesis-relat

30 62 38.8 157 2 T09659 pathogenesis-relat
31 62 38.8 157 2 T09526 stress response ge
32 60 37.5 155 2 T11670 pathogenesis relat
33 60 37.5 156 1 SNFB1 pathogenesis-relat
34 60 37.5 158 2 S12568 pathogenesis-relat
35 59 36.9 140 2 T10059 cytokinin-induced
36 58.5 36.6 155 2 S52664 pathogenesis-relat
37 56.5 35.3 158 2 S42650 pathogenesis-relat
38 55.5 34.7 158 2 S47140 intracellular path
39 54.5 34.1 157 2 T10732 pathogenesis-relat
40 54 33.8 155 1 SNFB2 STH-21 protein - p
41 54 33.8 155 2 S35162 hypothetical prote
42 52.5 32.8 458 2 G64507 major allergen Dau
43 52 32.5 154 2 T14326 pathogenesis-relat
44 52 32.5 155 2 S04553 pathogenesis-relat
45 52 32.5 155 2 S04552 pathogenesis-relat

ALIGNMENTS

RESULT 1
C55699
major pollen allergen Bet v 1d/h - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C;Accession: C55699; S41901; S41898
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.

J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom
A;Reference number: A55699; MUID:95155322; PMID:7852325
A;Accession: C55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: UNIPROT:P43177; UNIPARC:UPI000016DCF7; EMBL:X77266; NID:9452731; PI
A;Note: the source is designated as Betula verrucosa
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffmann-Sommergruber, K.; Heberle-
submitted to the EMBL Data Library, January 1994
A;Reference number: S41896

A;Accession: S41901
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SW2>
A;Cross-references: UNIPARC:UPI000016DCF7; EMBL:X77270; NID:9452737; PIDN:CAA54486.1; P
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1d/h #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 94.4%; Score 151; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 2.4e-14;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 32
|||||
Db 130 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 160

RESULT 2
F55699
major pollen allergen Bet v 1g - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C;Accession: F55699; S41896
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chrom
A;Reference number: A55699; MUID:95155322; PMID:7852325
A;Accession: F55699
A;Molecule type: mRNA

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:43:29 ; Search time 53.9227 Seconds
(without alignments)
418.691 Million cell updates/sec

Title: US-10-026-911-5
Perfect score: 160
Sequence: 1 CKAQVQKASKEMGETILLRAVESYLLAHSAYN 32

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2166443 seqs, 705528306 residues
Total number of hits satisfying chosen parameters: 2166443

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Uniprot 05.80.*
1: uniprot_sprot.*
2: uniprot_trembl.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Match	Query Length	DB ID	Description
1	151	94.4	159	1 BEVIA BETVE	P15494 betula verr
2	151	94.4	159	1 BEVID BETVE	P43177 betula verr
3	151	94.4	159	1 BEVIG BETVE	P43180 betula verr
4	151	94.4	159	1 BEVIL BETVE	P43185 betula verr
5	151	94.4	159	2 O23746 BETVE	O23746 betula verr
6	151	94.4	159	2 O23748 BETVE	O23748 betula verr
7	151	94.4	159	2 O546V0 BETVE	O546V0 betula verr
8	151	94.4	159	2 O546V1 BETVE	O546V1 betula verr
9	151	94.4	160	2 O24642 BETVE	O24642 betula verr
10	151	94.4	160	2 Q42499 BETVE	Q42499 betula verr
11	151	94.4	160	2 O23751 BETVE	O23751 betula verr
12	151	94.4	160	2 O23752 BETVE	O23752 betula verr
13	151	94.4	160	2 O23753 BETVE	O23753 betula verr
14	151	94.4	160	2 O546U3 BETVE	O546U3 betula verr
15	151	94.4	160	2 Q96365 BETVE	Q96365 betula verr
16	151	94.4	160	2 Q96366 BETVE	Q96366 betula verr
17	151	94.4	160	2 Q96367 BETVE	Q96367 betula verr
18	151	94.4	160	2 Q96368 BETVE	Q96368 betula verr
19	151	94.4	160	2 Q96370 BETVE	Q96370 betula verr
20	151	94.4	160	2 Q98CH5 BETVE	Q98CH5 betula verr
21	151	94.4	160	2 Q9SCH9 BETVE	Q9SCH9 betula verr
22	151	94.4	160	2 Q9SCH9 BETVE	Q9SCH9 betula verr
23	151	94.4	160	2 Q9SCI0 BETVE	Q9SCI0 betula verr
24	151	94.4	160	2 Q9ZS38 BETVE	Q9ZS38 betula verr
25	151	94.4	160	2 Q9ZS38 BETVE	Q9ZS38 betula verr
26	150	93.8	159	1 BEVIE BETVE	P43178 betula verr
27	150	93.8	159	1 BEVIF BETVE	P43179 betula verr
28	150	93.8	159	1 BEVILJ BETVE	P43183 betula verr
29	150	93.8	159	2 O23750 BETVE	O23750 betula verr
30	150	93.8	160	2 Q39431 BETVE	Q39431 betula verr
31	150	93.8	160	2 Q9SYW2 BETVE	Q9SYW2 betula verr

32	148	92.5	160	2 Q9AYS2 9ROSI	Q9AYS2 betula plat
33	148	92.5	160	2 Q9AYS3 9ROSI	Q9AYS3 betula plat
34	148	92.5	160	2 Q9AYS4 9ROSI	Q9AYS4 betula plat
35	148	92.5	160	2 Q9SYW0 BETVE	Q9SYW0 betula verr
36	147	91.9	160	2 Q9SCI2 BETVE	Q9SCI2 betula verr
37	145	90.6	160	2 O23754 BETVE	O23754 betula verr
38	145	90.6	160	2 Q39426 BETVE	Q39426 betula verr
39	144	90.0	160	2 Q9SYW1 BETVE	Q9SYW1 betula verr
40	143	89.4	160	2 Q96371 BETVE	Q96371 betula verr
41	131	81.9	159	2 O23749 BETVE	O23749 betula verr
42	131	81.9	160	2 Q9ZS39 BETVE	Q9ZS39 betula verr
43	129	80.6	159	2 Q39420 BETVE	Q39420 betula verr
44	129	80.6	160	2 Q39417 BETVE	Q39417 betula verr
45	129	80.6	160	2 Q9LEP0 BETVE	Q9LEP0 betula verr

ALIGNMENTS

RESULT 1
BEVIA BETVE
ID BEVIA BETVE STANDARD; PRT; 159 AA.
AC P15494; Q96369;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 10-MAY-2005 (Rel. 47, Last annotation update)
DE Major pollen allergen Bet v 1-A (Bet v 1-A).
GN Name=BETVIA; Synonym=BETVI;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
OC rosids; eurosids 1; Fagales; Betulaceae; Betula.
OX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE, AND PROTEIN SEQUENCE OF 1-34.
RC TISSUE=Pollen;
RX MEDLINE=90005395; PubMed=2571499;
RA Breiteneder H., Pottenburger K., Bito A., Valenta R., Kraft D.,
RA Rumpold H., Scheiner O., Breitenbach M.;
RT "The gene coding for the major birch pollen allergen Betv1, is highly
RT homologous to a pea disease resistance response gene.";
RL EMBO J. 8:1935-1938(1989).
RN [2]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pollen;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DBJ databases.
RN [3]
RP PROTEIN SEQUENCE.
RC TISSUE=Pollen;
RX MEDLINE=95155322; PubMed=7852325; DOI=10.1074/jbc.270.6.2607;
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RA "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
RN [4]
RP PARTIAL PROTEIN SEQUENCE.
RC MEDLINE=91317572; PubMed=2101127;
RA Elsayed S., Vik H.;
RT "Purification and N-terminal amino acid sequence of two birch pollen
RT isoallergens (Bet v I and Bet v II).";
RL Int. Arch. Allergy Appl. Immunol. 93:378-384(1990).
RN [5]
RP X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS), AND STRUCTURE BY NMR.
RC MEDLINE=97102431; PubMed=8946858;
RA Gajhede M., Osmark P., Poulsen F.M., Ipsen H., Larsen J.N.,
RA van Neerven R.J.J., Schou C., Loewenstein H., Spangfort M.D.;
RT "X-ray and NMR structure of Bet v 1, the origin of birch pollen
RT allergy.";
RL Nat. Struct. Biol. 3:1040-1045(1996).
CC -!- SUBCELLULAR LOCATION: Cytoplasmic.

```

CC CC -!- ALLERGEN: Causes an allergic reaction in human. Is a cause of type
CC CC 1 allergic reactions in Europe, North America and USSR.
CC CC -!- SIMILARITY: Belongs to the BetVI family.
CC CC -----
CC CC This Swiss-Prot entry is copyright. It is produced through a collaboration
CC CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC CC the European Bioinformatics Institute. There are no restrictions on its
CC CC use as long as its content is in no way modified and this statement is not
CC CC removed.
CC CC -----
DR EMBL; X15877; CAA33887.1; -; mRNA.
DR EMBL; Z80098; CAB02153.1; -; mRNA.
DR EMBL; Z80099; CAB02154.1; -; mRNA.
DR EMBL; Z80104; CAB02159.1; -; mRNA.
DR PIR; S05376; S05376.
DR PDB; 1B6F; NMR; A=1-159.
DR PDB; 1BTV; NMR; @=1-159.
DR PDB; 1BVI; X-ray; A/D/G/J=1-159.
DR PDB; 1FSK; X-ray; A/D/G/J=1-159.
DR PDB; 1LLT; X-ray; A=1-159.
DR PDB; 1QMR; X-ray; A=1-159.
DR PIR; PF00407; Bet v 1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR ProDom; PD000531; Bet v 1; 1.
DR PROSITE; PS00451; PATHOGENESIS BETVI; 1.
KW 3D-structure; Allergen; Direct protein sequencing; Multigene family;
KW Pathogenesis-related protein; Plant defense.
FT INIT MET 0
FT VARIANT 62 62 F -> L.
FT STRAND 2 11
FT HELIX 15 22
FT TURN 23 25
FT TURN 26 33
FT TURN 35 37
FT TURN 40 45
FT TURN 50 51
FT STRAND 53 57
FT TURN 60 61
FT STRAND 66 75
FT TURN 76 79
FT STRAND 80 88
FT TURN 89 90
FT STRAND 92 92
FT TURN 93 94
FT STRAND 95 106
FT TURN 108 109
FT STRAND 112 122
FT TURN 124 125
FT HELIX 130 153
FT TURN 155 159
SQ SEQUENCE 159 AA; 17440 MW; 96E181194BBA83E6 CRC64;

Query Match 94.4%; Score 151; DB 1; Length 159;
Best Local Similarity 100.0%; Pred. No. 7.5e-14;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 32
Db |||||
129 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 159

RESULT 2
BEVID BETVE
ID BEVID BETVE STANDARD; PRT; 159 AA.
AC P43177;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 10-MAY-2005 (Rel. 47, Last annotation update)
DE Major pollen allergen Bet v 1-D/H (Bet v I-D/H).
GN Name=BETVID;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
OC rosids; eurosids I; Fagales; Betulaceae; Betula.
OX NCBI_TaxID=3505;
RN NUCLEOTIDE SEQUENCE, AND PARTIAL PROTEIN SEQUENCE.
RP TISSUE=Pollen;
RC MEDLINE=95155322; PubMed=7852325; DOI=10.1074/jbc.270.6.2607;
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -!- SUBCELLULAR LOCATION: Cytoplasmic.
CC -!- ALLERGEN: Causes an allergic reaction in human. Is a cause of type
CC CC 1 allergic reactions in Europe, North America and USSR.
CC CC -!- SIMILARITY: Belongs to the BetVI family.
CC CC -----
CC CC This Swiss-Prot entry is copyright. It is produced through a collaboration
CC CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC CC the European Bioinformatics Institute. There are no restrictions on its
CC CC use as long as its content is in no way modified and this statement is not
CC CC removed.
CC CC -----
DR EMBL; X77266; CAA54482.1; -; mRNA.
DR EMBL; X77270; CAA54486.1; -; mRNA.
DR PIR; C55699; C55699.
DR HSP; P43185; 1FM4.
DR SMR; P43177; 1-159.
DR InterPro; IPR000916; Bet v 1.
DR Pfam; PF00407; Bet v 1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR ProDom; PD000531; Bet v 1; 1.
DR PROSITE; PS00451; PATHOGENESIS BETVI; 1.
KW Allergen; Direct protein sequencing; Multigene family;
KW Pathogenesis-related protein; Plant defense.
FT INIT MET 0
FT SEQUENCE 159 AA; 17418 MW; 8D1F38FE56106FD CRC64;

Query Match 94.4%; Score 151; DB 1; Length 159;
Best Local Similarity 100.0%; Pred. No. 7.5e-14;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 32
Db |||||
129 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 159

RESULT 3
BEVID BETVE
ID BEVID BETVE STANDARD; PRT; 159 AA.
AC P43180;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 10-MAY-2005 (Rel. 47, Last annotation update)
DE Major pollen allergen Bet v 1-G (Bet v I-G).
GN Name=BETVIG;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
OC rosids; eurosids I; Fagales; Betulaceae; Betula.
OX NCBI_TaxID=3505;
RN NUCLEOTIDE SEQUENCE, AND PARTIAL PROTEIN SEQUENCE.
RP TISSUE=Pollen;
RC MEDLINE=95155322; PubMed=7852325; DOI=10.1074/jbc.270.6.2607;
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).

```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:44:15 ; Search time 25.2818 Seconds
(without alignments)
104.645 Million cell updates/sec

Title: US-10-026-911-5
Perfect score: 160
Sequence: 1 CKAQVYKASKEMGETLLRAVESYLLAHSDAYN 32

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 572060 seqs, 82675679 residues

Total number of hits satisfying chosen parameters: 572060

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Issued Patents AA:*

- 1: /cgn2_6/ptodata/1/iaa/5 COMB.pep.*
- 2: /cgn2_6/ptodata/1/iaa/6 COMB.pep.*
- 3: /cgn2_6/ptodata/1/iaa/H COMB.pep.*
- 4: /cgn2_6/ptodata/1/iaa/PCTUS COMB.pep.*
- 5: /cgn2_6/ptodata/1/iaa/RE COMB.pep.*
- 6: /cgn2_6/ptodata/1/iaa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	151	94.4	160	1	US-07-847-010-23
2	107	66.9	160	1	US-07-847-010-3
3	105	65.6	160	1	US-07-847-010-11
4	105	65.6	160	1	US-07-847-010-14
5	105	65.6	160	1	US-07-847-010-17
6	105	65.6	160	1	US-07-847-010-20
7	74.5	46.6	158	2	US-08-964-722-2
8	60	37.5	160	2	US-09-257-583-11
9	58.5	36.6	158	6	5312912-2
10	55	34.4	350	2	US-09-270-767-47560
11	50	31.2	303	2	US-09-489-039A-8710
12	50	31.2	608	2	US-09-252-991A-31217
13	49.5	30.9	305	1	US-08-138-636-2
14	49.5	30.9	305	1	US-08-319-622A-2
15	49.5	30.9	305	1	US-08-471-564-2
16	49.5	30.9	312	2	US-09-902-540-13309
17	49	30.6	47	2	US-08-851-843A-128
18	49	30.6	47	2	US-08-974-549A-248
19	49	30.6	47	2	US-08-854-050-128
20	49	30.6	47	2	US-09-430-323-128
21	49	30.6	47	2	US-09-402-181B-248
22	49	30.6	47	2	US-09-721-456-248
23	49	30.6	47	2	US-09-766-253-128
24	49	30.6	47	2	US-10-034-295-128
25	49	30.6	47	2	US-09-438-486A-128
26	48	30.0	465	2	US-08-622-191-5
27	47	29.4	52	1	US-07-872-678A-46

Sequence 6, Appli
Sequence 32343, A
Sequence 32284, A
Sequence 47, Appl
Sequence 44, Appl
Sequence 331, App
Sequence 21470, A
Sequence 1, Appli
Sequence 27748, A
Sequence 4, Appli
Sequence 11438, A
Sequence 94, Appl
Sequence 16955, A
Sequence 4734, Ap
Sequence 13318, A
Sequence 1, Appli
Sequence 4, Appli
Sequence 5, Appli

28 47 29.4 158 2 US-08-199-219-6
29 47 29.4 350 2 US-09-270-767-32343
30 47 29.4 450 2 US-09-252-991A-32284
31 47 29.4 465 1 US-07-872-678A-47
32 47 29.4 465 2 US-09-347-878-44
33 47 29.4 596 2 US-09-199-637A-331
34 47 29.4 596 2 US-09-252-991A-21470
35 47 29.4 692 2 US-10-318-308-1
36 47 29.4 869 2 US-09-252-991A-27748
37 46.5 29.1 211 2 US-09-394-142B-4
38 46.5 29.1 211 2 US-09-949-016-11438
39 46.5 29.1 388 2 US-08-861-774E-94
40 46.5 29.1 481 2 US-09-252-991A-16955
41 46 28.7 121 2 US-09-328-352-4734
42 46 28.7 151 2 US-09-489-039A-13318
43 46 28.7 154 1 US-08-363-010-1
44 46 28.7 154 1 US-08-911-434A-4
45 46 28.7 223 1 US-08-829-027-5

ALIGNMENTS

RESULT 1

US-07-847-010-23
; Sequence 23, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valentia, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM: disk
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 23:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:

```

Db      131 AEQIKTEKAVGLLKAVESYLLAHSDAYN 160

RESULT 3
US-07-847-010-11
; Sequence 11, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valent, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 11:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERGEN AB, ENGELHOLM, SWEDEN
US-07-847-010-11
Query Match 65.6%; Score 105; DB 1; Length 160;
Best Local Similarity 70.0%; Pred. No. 1.3e-08;
Matches 21; Conservative 4; Mismatches 5; Indels 0; Gaps 0;

QY      3 AEQVASKEMGETLLRAVESYLLAHSDAYN 32
      11: : : : : : : : : : : : : : : : :
Db      131 AEEMKAKEMAEKLLRAVETYLLAHSAEYN 160

RESULT 4
US-07-847-010-14
; Sequence 14, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo

```


GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 10:01:54 ; Search time 39.0718 Seconds
(without alignments)
342.204 Million cell updates/sec

Title: US-10-026-911-5
Perfect score: 160
Sequence: 1 CKAQVQKSKEMGETLLRAVESYLLAHSDAYN 32

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1867569 seqs, 417829326 residues

Total number of hits satisfying chosen parameters: 1867569

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Published Applications_AA_Main:
1: /cgn2_6/prodata/1/pubpaa/US07_PUBCOMB.pep:*
2: /cgn2_6/prodata/1/pubpaa/US08_PUBCOMB.pep:*
3: /cgn2_6/prodata/1/pubpaa/US09_PUBCOMB.pep:*
4: /cgn2_6/prodata/1/pubpaa/US10A_PUBCOMB.pep:*
5: /cgn2_6/prodata/1/pubpaa/US10B_PUBCOMB.pep:*
6: /cgn2_6/prodata/1/pubpaa/US11_PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	160	100.0	32	4	US-10-026-911-5
2	151	94.4	80	5	US-10-799-514-6
3	151	94.4	153	5	US-10-799-514-19
4	151	94.4	153	5	US-10-799-514-21
5	151	94.4	159	3	US-09-981-009B-1
6	151	94.4	159	3	US-09-847-208-34
7	151	94.4	159	3	US-09-847-208-36
8	151	94.4	159	3	US-09-847-208-39
9	151	94.4	159	3	US-09-847-208-42
10	151	94.4	159	3	US-09-957-806A-6
11	151	94.4	159	4	US-10-001-245-3
12	151	94.4	159	4	US-10-001-245-92
13	151	94.4	159	4	US-10-719-553-37
14	151	94.4	159	4	US-10-698-855-5
15	151	94.4	160	4	US-10-440-516-1
16	151	94.4	160	4	US-10-440-516-2
17	151	94.4	160	4	US-10-440-516-6
18	151	94.4	160	5	US-10-799-514-7
19	151	94.4	160	5	US-10-809-689-87
20	150	93.8	159	3	US-09-847-208-37
21	150	93.8	159	3	US-09-847-208-38
22	150	93.8	159	3	US-09-847-208-40
23	147	91.9	159	4	US-10-001-245-4
24	147	91.9	159	4	US-10-440-516-47
25	147	91.9	160	4	US-10-440-516-3
26	147	91.9	160	4	US-10-440-516-4
27	147	91.9	160	4	US-10-440-516-5

28	147	91.9	161	4	US-10-440-516-43	Sequence 43, Appl
29	147	91.9	161	4	US-10-440-516-44	Sequence 44, Appl
30	147	91.9	161	4	US-10-440-516-45	Sequence 45, Appl
31	147	91.9	162	4	US-10-440-516-46	Sequence 46, Appl
32	146	91.2	159	4	US-10-001-245-9	Sequence 9, Appl
33	146	91.2	160	4	US-10-440-516-23	Sequence 23, Appl
34	145	90.6	160	4	US-10-440-516-8	Sequence 8, Appl
35	143	89.4	160	4	US-10-440-516-40	Sequence 40, Appl
36	142	88.8	160	4	US-10-440-516-11	Sequence 11, Appl
37	141	88.1	160	4	US-10-440-516-7	Sequence 7, Appl
38	140	87.5	159	4	US-10-001-245-2	Sequence 2, Appl
39	140	87.5	160	4	US-10-001-245-8	Sequence 8, Appl
40	140	87.5	160	4	US-10-001-245-10	Sequence 10, Appl
41	140	87.5	160	4	US-10-001-245-11	Sequence 11, Appl
42	140	87.5	160	4	US-10-001-245-12	Sequence 12, Appl
43	139	86.9	160	4	US-10-001-245-1	Sequence 1, Appl
44	139	86.9	160	4	US-10-001-245-6	Sequence 6, Appl
45	139	86.9	160	4	US-10-440-516-9	Sequence 9, Appl

ALIGNMENTS

RESULT 1
US-10-026-911-5
; Sequence 5, Application US/10026911
; Publication NO. US20030078201A1
; GENERAL INFORMATION:
; APPLICANT: Focke, Margarete
; APPLICANT: Mahler, Vera
; APPLICANT: Sperr, Wolfgang R.
; APPLICANT: Valent, Peter
; APPLICANT: Kraft, Dietrich
; APPLICANT: Valenta, Rudolf
; TITLE OF INVENTION: Allergy Vaccines and Their Preparation
; FILE REFERENCE: 0273-0005
; CURRENT APPLICATION NUMBER: US/10/026,911
; CURRENT FILING DATE: 2002-07-24
; NUMBER OF SEQ ID NOS: 6
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 5
; LENGTH: 32
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:
; OTHER INFORMATION: solvent-exposed peptide
US-10-026-911-5

Query Match 100.0%; Score 160; DB 4; Length 32;
Best Local Similarity 100.0%; Pred. No. 3.3e-16;
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKAQVQKSKEMGETLLRAVESYLLAHSDAYN 32
DB 1 CKAQVQKSKEMGETLLRAVESYLLAHSDAYN 32

RESULT 2
US-10-799-514-6
; Sequence 6, Application US/10799514
; Publication NO. US20040241178A1
; GENERAL INFORMATION:
; APPLICANT: Spertini, Francois
; APPLICANT: Cortes, Blaise
; TITLE OF INVENTION: Allergen Peptide Fragments and Use Thereof
; FILE REFERENCE: 25720-502
; CURRENT APPLICATION NUMBER: US/10/799,514
; CURRENT FILING DATE: 2004-03-12
; PRIOR APPLICATION NUMBER: 60/455,004
; PRIOR FILING DATE: 2003-03-14
; NUMBER OF SEQ ID NOS: 23
; SOFTWARE: PatentIn Ver. 2.1

```
; SEQ ID NO 6
; LENGTH: 80
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
US-10-799-514-6

Query Match          94.4%; Score 151; DB 5; Length 80;
Best Local Similarity 100.0%; Pred. No. 2.1e-14;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 32
Db 50 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 80

RESULT 3
US-10-799-514-19
; Sequence 19, Application US/10799514
; Publication No. US20040241178A1
; GENERAL INFORMATION:
; APPLICANT: Spertini, Francois
; APPLICANT: Corthesy, Blaise
; TITLE OF INVENTION: Allergen Peptide Fragments and Use Thereof
; FILE REFERENCE: 25720-502
; CURRENT APPLICATION NUMBER: US/10/799,514
; CURRENT FILING DATE: 2004-03-12
; PRIOR APPLICATION NUMBER: 60/455,004
; PRIOR FILING DATE: 2003-03-14
; NUMBER OF SEQ ID NOS: 23
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 19
; LENGTH: 153
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
US-10-799-514-19

Query Match          94.4%; Score 151; DB 5; Length 153;
Best Local Similarity 100.0%; Pred. No. 4.6e-14;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 32
Db 123 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 153

RESULT 4
US-10-799-514-21
; Sequence 21, Application US/10799514
; Publication No. US20040241178A1
; GENERAL INFORMATION:
; APPLICANT: Spertini, Francois
; APPLICANT: Corthesy, Blaise
; TITLE OF INVENTION: Allergen Peptide Fragments and Use Thereof
; FILE REFERENCE: 25720-502
; CURRENT APPLICATION NUMBER: US/10/799,514
; CURRENT FILING DATE: 2004-03-12
; PRIOR APPLICATION NUMBER: 60/455,004
; PRIOR FILING DATE: 2003-03-14
; NUMBER OF SEQ ID NOS: 23
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 21
; LENGTH: 153
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
US-10-799-514-21

Query Match          94.4%; Score 151; DB 5; Length 153;
Best Local Similarity 100.0%; Pred. No. 4.6e-14;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 32
Db 129 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 159

RESULT 5
US-09-981-009B-1
; Sequence 1, Application US/09981009B
; Publication No. US200300411354A1
; GENERAL INFORMATION:
; APPLICANT: Kjaerulff, Soren
; APPLICANT: Roggen, Erwin
; TITLE OF INVENTION: Transgenic Plants
; FILE REFERENCE: 10082.200-US
; CURRENT APPLICATION NUMBER: US/09/981,009B
; CURRENT FILING DATE: 2002-06-14
; NUMBER OF SEQ ID NOS: 5
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula pendula
US-09-981-009B-1

Query Match          94.4%; Score 151; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 4.8e-14;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 32
Db 129 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 159

RESULT 6
US-09-847-208-34
; Sequence 34, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
; APPLICANT: Zhu, Daocheng
; TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
; TITLE OF INVENTION: ICE-MEDIATED ALLERGIC DISEASES
; FILE REFERENCE: UC67.002A
; CURRENT APPLICATION NUMBER: US/09/847,208
; CURRENT FILING DATE: 2001-05-01
; NUMBER OF SEQ ID NOS: 177
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 34
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa (White birch) (Betula pendula)
US-09-847-208-34

Query Match          94.4%; Score 151; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 4.8e-14;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 32
Db 129 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 159

RESULT 7
US-09-847-208-36
; Sequence 36, Application US/09847208
; Publication No. US20030082190A1
```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 10:05:54 ; Search time 7.07182 Seconds
(without alignments)
192.264 Million cell updates/sec

Title: US-10-026-911-5
Perfect score: 160
Sequence: 1 KAEQVASKEMGETLLRAVESYLLAHSDAYN 32

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 217505 seqs, 42489236 residues

Total number of hits satisfying chosen parameters: 217505

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Published Applications_AA_New:*
1: /SIDSS/ptodata/1/pubppaa/US08_NEW_PUB.pdb:*
2: /SIDSS/ptodata/1/pubppaa/US06_NEW_PUB.pdb:*
3: /SIDSS/ptodata/1/pubppaa/US07_NEW_PUB.pdb:*
4: /SIDSS/ptodata/1/pubppaa/PCT_NEW_PUB.pdb:*
5: /SIDSS/ptodata/1/pubppaa/US03_NEW_PUB.pdb:*
6: /SIDSS/ptodata/1/pubppaa/US10_NEW_PUB.pdb:*
7: /SIDSS/ptodata/1/pubppaa/US11_NEW_PUB.pdb:*
8: /SIDSS/ptodata/1/pubppaa/US60_NEW_PUB.pdb:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
1	151	94.4	160	6	US-10-498-026-81
2	151	94.4	172	7	US-11-102-883-18
3	151	94.4	289	7	US-11-102-883-26
4	151	94.4	300	7	US-11-102-883-6
5	51	31.9	283	7	US-11-102-883-32
6	51	31.9	294	7	US-11-102-883-30
7	50.5	31.6	1018	7	US-11-079-463-5592
8	49	30.6	47	7	US-11-207-078-248
9	49	30.6	785	7	US-11-079-463-6914
10	48	30.0	406	7	US-11-087-099-10480
11	48	30.0	406	7	US-11-172-740-1391
12	48	30.0	406	7	US-11-172-740-1392
13	48	30.0	406	7	US-11-188-298-9700
14	48	30.0	483	7	US-11-096-568A-18678
15	48	30.0	544	7	US-11-096-568A-18678
16	48	30.0	555	7	US-11-096-568A-18677
17	47	29.4	223	7	US-11-096-568A-7490
18	47	29.4	269	6	US-10-495-597-13
19	47	29.4	304	7	US-11-096-568A-7489
20	47	29.4	312	7	US-11-096-568A-7488
21	47	29.4	330	7	US-11-188-298-2814
22	46.5	29.1	370	7	US-11-087-099-2703
23	46.5	29.1	370	7	US-11-087-099-9775
24	46.5	29.1	371	7	US-11-087-099-10802
25	46	28.7	223	6	US-10-878-556A-167

26 46 28.7 257 6 US-10-454-437-160 Sequence 160, App
27 46 28.7 325 7 US-11-172-740-1393 Sequence 1393, Ap
28 46 28.7 409 7 US-11-172-740-1397 Sequence 1397, Ap
29 46 28.7 409 7 US-11-172-740-1399 Sequence 1399, Ap
30 46 28.7 409 7 US-11-188-298-1210 Sequence 1210, Ap
31 46 28.7 409 7 US-11-188-298-21118 Sequence 21118, A
32 46 28.7 580 7 US-11-249-993-2 Sequence 2, Appli
33 45 28.1 316 6 US-10-506-454-1230 Sequence 1230, Ap
34 45 28.1 443 6 US-10-793-628-1200 Sequence 1200, Ap
35 45 28.1 622 7 US-11-070-080-22 Sequence 22, Appl
36 44 27.5 400 7 US-11-188-298-19584 Sequence 19584, A
37 44 27.5 404 7 US-11-172-740-1390 Sequence 1390, Ap
38 44 27.5 404 7 US-11-188-298-17854 Sequence 17854, A
39 44 27.5 405 7 US-11-087-099-286 Sequence 286, App
40 44 27.5 405 7 US-11-188-298-7375 Sequence 7375, Ap
41 44 27.5 424 7 US-11-188-298-7738 Sequence 7738, Ap
42 44 27.5 438 7 US-11-087-099-5191 Sequence 5191, Ap
43 44 27.5 438 7 US-11-079-463-9279 Sequence 9279, Ap
44 44 27.5 3960 6 US-10-995-561-771 Sequence 771, App
45 44 27.5 5335 6 US-10-995-561-777 Sequence 777, App

ALIGNMENTS

RESULT 1
US-10-498-026-81
; Sequence 81, Application US/10498026
; Publication No. US20060024334A1
; GENERAL INFORMATION:
; APPLICANT: CIRCASSIA LIMITED
; TITLE OF INVENTION: IMMUNOTHERAPEUTIC METHODS AND SYSTEMS
; FILE REFERENCE: N.87430 WO GCW
; CURRENT APPLICATION NUMBER: US/10/498,026
; CURRENT FILING DATE: 2004-06-04
; NUMBER OF SEQ ID NOS: 118
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 81
; LENGTH: 160
; TYPE: PRT
; ORGANISM: Betula pendula
US-10-498-026-81

Query Match 94.4%; Score 151; DB 6; Length 160;
Best Local Similarity 100.0%; Pred. No. 6.7e-15;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 KAEQVASKEMGETLLRAVESYLLAHSDAYN 32
Db 130 KAEQVASKEMGETLLRAVESYLLAHSDAYN 160

RESULT 2

US-11-102-883-18
; Sequence 18, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lamping, Norbert
; APPLICANT: Crameri, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods an
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2

```
; SEQ ID NO 18
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Betula verrucosa
US-11-102-883-18

Query Match          94.4%; Score 151; DB 7; Length 172;
Best Local Similarity 100.0%; Pred. No. 7.4e-15;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 32
   |||||
Db 142 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 172

RESULT 3
US-11-102-883-26
; Sequence 26, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lampung, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 26
; LENGTH: 289
; TYPE: PRT
; ORGANISM: tat-ti-bet v 1
US-11-102-883-26

Query Match          94.4%; Score 151; DB 7; Length 289;
Best Local Similarity 100.0%; Pred. No. 1.4e-14;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 32
   |||||
Db 259 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 289

RESULT 4
US-11-102-883-6
; Sequence 6, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lampung, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 6
```

```
; LENGTH: 300
; TYPE: PRT
; ORGANISM: Human immunodeficiency virus + Homo sapiens + Betula verrucosa
US-11-102-883-6

Query Match          94.4%; Score 151; DB 7; Length 300;
Best Local Similarity 100.0%; Pred. No. 1.4e-14;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 32
   |||||
Db 270 KAEQVKASKEMGETLLRAVESYLLAHSDAYN 300

RESULT 5
US-11-102-883-32
; Sequence 32, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lampung, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 32
; LENGTH: 283
; TYPE: PRT
; ORGANISM: tat-ti-api g 1
US-11-102-883-32

Query Match          31.9%; Score 51; DB 7; Length 283;
Best Local Similarity 37.5%; Pred. No. 7;
Matches 9; Conservative 7; Mismatches 8; Indels 0; Gaps 0;

QY 4 EOVKASKEMGETLLRAVESYLLAH 27
   |||||
Db 260 ENIKYANEQNTALFKALEAYLIAN 283

RESULT 6
US-11-102-883-30
; Sequence 30, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lampung, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 30
; LENGTH: 294
```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:42:18 ; Search time 46.9282 Seconds
(without alignments)
290.247 Million cell updates/sec

Title: US-10-026-911-6
Perfect score: 168
Sequence: 1 CVDHTNFKYNSVIEGGPIGDTLEKISNEIK 31

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2443163 seqs, 439378781 residues

Total number of hits satisfying chosen parameters: 2443163

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_21.*

- 1: Geneseq1980s.*
- 2: Geneseq1990s.*
- 3: Geneseq2000s.*
- 4: Geneseq2001s.*
- 5: Geneseq2002s.*
- 6: Geneseq2003as.*
- 7: Geneseq2003bs.*
- 8: Geneseq2004s.*
- 9: Geneseq2005s.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	168	100.0	31	5	ABB83635
2	159	94.6	159	2	AAY45216 Wild type
3	159	94.6	159	4	ABM00015 Major pol
4	159	94.6	159	5	ABG66966 Birch all
5	159	94.6	159	5	ABG67097 Birch all
6	159	94.6	159	5	ABG66959 Birch all
7	159	94.6	159	5	ABG66969 Birch all
8	159	94.6	159	5	ABG67096 Birch all
9	159	94.6	159	5	ABG67093 Birch all
10	159	94.6	159	5	ABG67050 Birch all
11	159	94.6	159	5	ABG66964 Birch all
12	159	94.6	159	5	ABG66967 Birch all
13	159	94.6	159	5	ABG67102 Birch all
14	159	94.6	159	5	ABG66958 Birch all
15	159	94.6	159	5	ABG67095 Birch all
16	159	94.6	159	5	ABG67101 Birch all
17	159	94.6	159	5	ABG67105 Birch all
18	159	94.6	159	5	ABG66965 Birch all
19	159	94.6	159	5	ABG67099 Birch all
20	159	94.6	159	5	ABG66968 Birch all
21	159	94.6	159	5	ABG67098 Birch all
22	159	94.6	159	5	ABG67106 Birch all
23	159	94.6	159	5	ABG67094 Birch all
24	159	94.6	159	5	ABB84185 Birch pol

25	159	94.6	159	8	ADF51233	Adf51233 Bet v 1 a
26	159	94.6	160	2	AAR04605	Aar04605 Major Bir
27	159	94.6	160	2	AAR21796	Aar21796 Bet v 1 a
28	159	94.6	160	2	AAY25649	Aay25649 Betula sp
29	159	94.6	160	5	ABG66970	Abg66970 Birch all
30	159	94.6	160	7	ADC34898	Adc34898 Tree alle
31	159	94.6	160	8	ADQ14386	Adq14386 Birch pol
32	159	94.6	160	8	ADR87218	Adr87218 Birch pol
33	159	94.6	160	8	ADS52093	Ads52093 Birch pol
34	159	94.6	160	8	ADS14364	Ads14364 Birch pol
35	159	94.6	172	8	ADM57312	Adm57312 Modular a
36	159	94.6	210	9	AEA81083	Aea81083 Grass/Bir
37	159	94.6	221	9	AEA81084	Aea81084 Grass/Bir
38	159	94.6	222	9	AEA81086	Aea81086 Grass/Bir
39	159	94.6	225	9	AEA81085	Aea81085 Birch/Gra
40	159	94.6	300	8	ADM57300	Adm57300 Modular a
41	154	91.7	159	5	ABG66986	Abg66986 Birch all
42	154	91.7	159	5	ABG66962	Abg66962 Birch all
43	154	91.7	159	5	ABG66987	Abg66987 Birch all
44	154	91.7	159	5	ABG67100	Abg67100 Birch all
45	154	91.7	159	5	ABG66963	Abg66963 Birch all

ALIGNMENTS

RESULT 1
ABB83635
ID ABB83635 standard; peptide; 31 AA.
XX
AC ABB83635;
XX
DT 10-OCT-2002 (first entry)
XX
DE Bet v 1-derived synthetic peptide #6.
XX
KW Non-allergenic; Bet v 1-derived peptide; allergy.
XX
OS Synthetic.
XX
PN EP1219299-A1.
XX
PD 03-JUL-2002.
XX
PF 28-DEC-2000; 2000EP-00128659.
XX
PR 28-DEC-2000; 2000EP-00128659.
XX
PA (SHAN-) SHAN BET-GES MBH.
XX
PI Focke M, Mahler V, Sperr WR, Valent P, Kraft D, Valenta R;
XX
WPI; 2002-559804/60.
XX
PT Allergy vaccines comprise a peptide containing 8 to 50 amino acids.
XX
PS Example 1; Page 6; 27pp; English.
XX
CC The present invention relates to a new composition containing
XX
CC antiallergic peptides useful in the treatment of allergic diseases. The
XX
CC present peptide is an non-allergenic Bet v 1-derived synthetic peptide,
XX
CC which stimulate Bet v 1-specific human T-cells
XX
SQ Sequence 31 AA;

Query Match 100.0%; Score 168; DB 5; Length 31;
Best Local Similarity 100.0%; Pred. No. 4e-18;
Matches 31; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CVDHTNFKYNSVIEGGPIGDTLEKISNEIK 31

DB 1 CVDHTNFKYNSVIEGGPIGDTLEKISNEIK 31

RESULT 2
 AAY45216
 ID AAY45216 standard; protein; 159 AA.
 XX AC AAY45216;
 XX AC AAY45216;
 XX 17-OCT-2003 (revised)
 DT 05-JAN-2000 (first entry)
 XX Wild type birch Bet v 1 protein sequence.
 XX Bet v 1; Ves v 5; pollen allergen; Fagales; Oleales; Pinales; mutant;
 KW Hymenoptera; IgE; immunoglobulin E; vaccine; allergic reaction.
 XX Betula pendula.
 OS
 XX WO9947680-A1.
 PN
 XX 23-SEP-1999.
 PD
 XX 16-MAR-1999; 99WO-DK000136.
 PF
 XX 16-MAR-1998; 98DK-00000364.
 PR
 XX (ALKA-) ALK-ABELLO AS.
 PA
 XX Ipsen HH, Spangfort MD, Larsen JN;
 PI
 XX WPI; 1999-601103/51.
 DR
 DR N-PSDB; AA225684.
 XX New mutated allergen with lower specific affinity to IgE, useful for
 PT treatment of allergic reactions.
 PT
 XX Example 1; Fig 3; 77pp; English.
 PS
 XX The present invention describes a recombinant mutated allergen, with a
 CC surface exposed substituted amino acid on a B-cell epitope. The
 CC recombinant, non-natural, mutated allergen has at least one surface-
 CC exposed conserved amino acid of a B-cell epitope substituted by another
 CC amino acid, and essentially the same alpha-carbon backbone tertiary
 CC structure as the naturally occurring allergen. The substituted amino acid
 CC does not occur in the same position of any known homologous protein
 CC within the taxonomic order of the natural allergen. Specific IgE binding
 CC to the mutant is reduced compared to the naturally occurring allergen.
 CC The recombinant allergen is used as a vaccine to treat, prevent or
 CC alleviate allergic reactions. The present sequence represents the wild
 CC type Bet v 1, which can have the following mutations: Thr10Pro, Asp25Gly,
 CC Asn28Thr + Lys32Gln, Glu45Ser, Asn47Ser, Lys55Asn, Glu60Ser, Thr77Ala and
 CC Pro108Gly. (Updated on 17-OCT-2003 to standardise OS field)
 XX
 SQ Sequence 159 AA;
 Query Match 94.6%; Score 159; DB 2; Length 159;
 Best Local Similarity 100.0%; Pred. No. 7.1e-16;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
 DB ||||||||||||||||||||||||||||||||||||||||
 74 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 103
 RESULT 3
 ABM00015
 ID ABM00015 standard; protein; 159 AA.
 XX
 XX AC ABM00015;
 XX 02-APR-2003 (first entry)
 DT
 XX Major pollen antigen Bet v 1-A SEQ ID NO 6.
 DE
 XX

KW Allergen; protein coordinate data; vaccine; antiallergic; immunogenicity;
 KW detergent; personal care composition; cosmetic.
 XX Betula pendula.
 OS
 XX WO200183559-A2.
 PN
 XX 08-NOV-2001.
 PD
 XX 30-APR-2001; 2001WO-DK000293.
 PF
 XX 28-APR-2000; 2000DK-00000707.
 PR
 PR 10-MAY-2000; 2000US-0203345P.
 PR 28-FEB-2001; 2001DK-00000327.
 PR 21-MAR-2001; 2001US-0277817P.
 XX
 XX (NOVO) NOVOZYMES AS.
 PA
 XX Roggen EL, Ernst S, Svendsen A, Friis EP, Von Der Osten C;
 PI
 XX WPI; 2001-626552/72.
 DR
 XX Selecting protein variants having modified immunogenicity, used to
 PT produce vaccines, detergents and personal care compositions, involves
 PT localizing epitope sequences on the three-dimensional structure of a
 PT protein.
 XX
 XX Claim 34; Page 484; 513pp; English.
 PS
 XX The invention relates to selecting a protein variant having modified
 CC immunogenicity, compared to a parent protein, comprising using the
 CC antibody binding sequence to localise epitope sequences on the three
 CC dimensional structure of the parent protein and defining an epitope area
 CC including amino acids within 5 Angstrom of the epitope amino acids. The
 CC method is useful for identifying structural epitopes on the 3-dimensional
 CC surface of commercial and environmental allergens. Compositions
 CC containing the protein variants are used as vaccines, detergents and
 CC personal care compositions, e.g. shampoo, balsam, hair conditioners, hair
 CC waving compositions, hair dyeing compositions, hair tonic, hair liquid,
 CC hair cream, hair rinse, hair spray, chewing gum, skin cream, sunscreen,
 CC shaving foam, cream soap, skin milk or foundation. The present sequence
 CC is that of a polypeptide of the invention
 XX
 SQ Sequence 159 AA;
 Query Match 94.6%; Score 159; DB 4; Length 159;
 Best Local Similarity 100.0%; Pred. No. 7.1e-16;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
 DB ||||||||||||||||||||||||||||||||||||||||
 74 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 103
 RESULT 4
 ABG66966
 ID ABG66966 standard; protein; 159 AA.
 XX
 XX AC ABG66966;
 XX 24-SEP-2002 (first entry)
 DT
 XX Birch allergen Bet v 1 mutant D125Y.
 DE
 XX Immunoglobulin E; IgE; allergen; allergy; mutein; hay fever;
 KW rhinoconjunctivitis; rhinitis; asthma; systemic anaphylaxis; mutant;
 KW vaccine; antiallergic; B cell epitope.
 XX
 XX Betula pendula.
 OS
 XX Synthetic.
 XX WO200240676-A2.
 PN
 XX

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:43:45 ; Search time 15.9282 Seconds
(without alignments)
187.261 Million cell updates/sec

Title: US-10-026-911-6
Perfect score: 168
Sequence: 1 CVDHTNFKYNSVIEGGPIGDTLEKISNEIK 31

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues
Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR 80.*
1: Piri.*
2: Pir2.*
3: Pir3.*
4: Pir4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	159	94.6	160	2 S05376	major pollen aller
2	158	94.0	160	2 C55699	major pollen aller
3	158	94.0	160	2 F55699	major pollen aller
4	158	94.0	160	2 I55699	major pollen aller
5	153	91.1	160	2 E55699	major pollen aller
6	153	91.1	160	2 G55699	major pollen aller
7	153	91.1	160	2 D55699	major pollen aller
8	135	80.4	160	2 S47250	gene 1-8c1 protein
9	133	79.2	160	2 S47249	gene 1-8c3 protein
10	131	78.0	160	2 A57427	major pollen aller
11	131	78.0	160	2 H55699	major pollen aller
12	131	78.0	160	2 A55699	major pollen aller
13	131	78.0	160	2 B55699	major pollen aller
14	127	75.6	159	2 S47251	gene 1 8c2 protein
15	107	63.7	160	2 S30056	major allergen Cor
16	107	63.7	160	2 S30054	major allergen Cor
17	101	60.1	160	2 S30055	major allergen Cor
18	101	60.1	160	2 S30053	major allergen Cor
19	93	55.4	157	2 T09659	pathogenesis-relat
20	93	55.4	157	2 T09526	stress response ge
21	91	54.2	159	2 T17004	major allergen Mal
22	84	50.0	160	2 T17007	major allergen Mal
23	84	50.0	160	2 T17005	major allergen Mal
24	84	50.0	160	2 T17006	major allergen Mal
25	81	48.2	153	2 S51119	MaDI protein - ap
26	81	48.2	159	2 JC4276	major allergen Mal
27	78	46.4	158	2 S42650	pathogenesis-relat
28	75	44.6	94	2 T06417	pathogenesis-relat
29	75	44.6	111	2 T06418	pathogenesis-relat

ALIGNMENTS

RESULT 1

S05376
major pollen allergen Bet v 1 - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 31-Mar-1990 #sequence_revision 31-Mar-1990 #text_change 09-Jul-2004
C;Accession: S05376; JC4834; B53288
R;Bretteneder, H.; Pettenburger, K.; Bito, A.; Valenta, R.; Kraft, D.; Rumpold, H.; Sch
EMBO J. 8, 1935-1938, 1989
A;Title: The gene coding for the major birch pollen allergen Betv1, is highly homologou
A;Reference number: S05376; MUID:90005395; PMID:2571499
A;Accession: S05376
A;Molecule type: mRNA
A;Residues: 1-160 <BRE>
A;Cross-references: UNIPROT:P15494; UNIPARC:UPI0000000314; EMBL:X15877; NID:gl7937; PID
R;Kung, A.J.; Susani, M.; Lindemann, A.; Machius, M.; Visser, A.J.W.G.; Scheiner, O.;
Biochem. Biophys. Res. Commun. 223, 187-192, 1996
A;Title: Evidence for an alpha helical T cell epitope in the C-terminus of the main bir
A;Reference number: JC4834; MUID:96254050; PMID:8660368
A;Accession: JC4834
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-160 <KUN>
A;Cross-references: UNIPARC:UPI0000000314
R;Ipsen, H.; Hansen, O.C.
Mol. Immunol. 28, 1279-1288, 1991
A;Title: The NH2-terminal amino acid sequence of the immunochemically partial identical
s) Car b 1 and oak (Quercus alba) Que a 1 pollens.
A;Reference number: A53288; MUID:92072607; PMID:1961201
A;Accession: B53288
A;Status: preliminary
A;Molecule type: protein
A;Residues: 2-39, 'XX', 42-44 <IPS>
A;Cross-references: UNIPARC:UPI0000177F58; PID:g2339734; PIDN:AAB20452.1
A;Experimental source: pollen
A;Note: sequence extracted from NCBI backbone (NCBIP:68408)
A;Note: the source is designated as Betula verrucosa
C;Comment: This protein induces IGE synthesis by B cells in a T cell dependent manner.
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1 #status experimental <MAT>

Query Match 94.6%; Score 159; DB 2; Length 160;
Best Local Similarity 100.0%; Pred. No. 5.2e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31

Db 75 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 104

RESULT 2

C55699

major pollen allergen Bet v 1d/h - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C:Accession: C55699; S41901; S41898
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography
A:Reference number: A55699; MUID:95155322; PMID:7852325
A:Accession: C55699
A:Molecule type: mRNA
A:Residues: 1-160 <SWO>
A:Cross-references: UNIPROT:P43177; UNIPARC:UPI000016DCF7; EMBL:X77266; NID:g452731; P1
A:Note: the source is designated as Betula verrucosa
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffmann-Sommergruber, K.; Heberle-I submitted to the EMBL Data Library, January 1994
A:Reference number: S41896
A:Accession: S41901
A>Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-160 <SW2>
A:Cross-references: UNIPARC:UPI000016DCF7; EMBL:X77270; NID:g452737; PIDN:CAA54486.1; P1
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1d/h #status experimental <MAT>
F:83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 94.0%; Score 158; DB 2; Length 160;
Best Local Similarity 96.7%; Pred. No. 7.2e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
Db 75 VDHTNFKYNSVIEGGPVGDTLEKISNEIK 104
|||||:|||||:|||||:|||||:|||||

RESULT 3
F55699
major pollen allergen Bet v 1g - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C:Accession: F55699; S41896
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography
A:Reference number: A55699; MUID:95155322; PMID:7852325
A:Accession: F55699
A:Molecule type: mRNA
A:Residues: 1-160 <SWO>
A:Cross-references: UNIPROT:P43180; UNIPARC:UPI000016DCFA; EMBL:X77269; NID:g452727; P1
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1g #status experimental <MAT>
F:83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 94.0%; Score 158; DB 2; Length 160;
Best Local Similarity 96.7%; Pred. No. 7.2e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
Db 75 VDHTNFKYNSVIEGGPVGDTLEKISNEIK 104
|||||:|||||:|||||:|||||:|||||

RESULT 4
I55699
major pollen allergen Bet v 1l - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C:Accession: I55699; S41904

R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography
A:Reference number: A55699; MUID:95155322; PMID:7852325
A:Accession: I55699
A:Molecule type: mRNA
A:Residues: 1-160 <SWO>
A:Cross-references: UNIPROT:P43185; UNIPARC:UPI000016DCDF; EMBL:X77273; NID:g452743; P1
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1l #status experimental <MAT>
F:83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 94.0%; Score 158; DB 2; Length 160;
Best Local Similarity 96.7%; Pred. No. 7.2e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
Db 75 VDHTNFKYNSVIEGGPVGDTLEKISNEIK 104
|||||:|||||:|||||:|||||:|||||

RESULT 5
E55699
major pollen allergen Bet v 1f/i - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C:Accession: E55699; S41905; S41900
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography
A:Reference number: A55699; MUID:95155322; PMID:7852325
A:Accession: E55699
A:Molecule type: mRNA
A:Residues: 1-160 <SWO>
A:Cross-references: UNIPROT:P43179; UNIPARC:UPI000016DCF9; EMBL:X77268; NID:g452735; P1
A:Note: the source is designated as Betula verrucosa
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffmann-Sommergruber, K.; Heberle-I submitted to the EMBL Data Library, January 1994
A:Reference number: S41896
A:Accession: S41905
A>Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-160 <SW2>
A:Cross-references: UNIPARC:UPI000016DCF9; EMBL:X77274; NID:g452745; PIDN:CAA54490.1; P1
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1f/i #status experimental <MAT>

Query Match 91.1%; Score 153; DB 2; Length 160;
Best Local Similarity 93.3%; Pred. No. 3.7e-14;
Matches 28; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
Db 75 VDHTNFKYNSVIEGGPVGDTLEKISNEIK 104
|||||:|||||:|||||:|||||:|||||

RESULT 6
G55699
major pollen allergen Bet v 1j - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C:Accession: G55699; S41902
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography
A:Reference number: A55699; MUID:95155322; PMID:7852325

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:43:29 ; Search time 52.2376 Seconds
(without alignments)
418.691 Million cell updates/sec

Title: US-10-026-911-6
Perfect score: 168
Sequence: 1 CVDHTNFKYNSVIEGGPIGDTLEKISNEIK 31

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2166443 seqs, 705528306 residues

Total number of hits satisfying chosen parameters: 2166443

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

UniProt_05.80.*

1: uniprot_sprot.*

2: uniprot_trembl.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	159	94.6	120	Q9SCI1_BETVE	Q9sci1 betula verr
2	159	94.6	159	BEVIA_BETVE	P15494 betula verr
3	159	94.6	159	Q546V0_BETVE	Q546v0 betula verr
4	159	94.6	160	Q9SCH6_BETVE	Q9sch6 betula verr
5	159	94.6	160	Q9SWI1_BETVE	Q9swi1 betula verr
6	159	94.6	160	Q42499_BETVE	Q42499 betula verr
7	159	94.6	160	Q23752_BETVE	Q23752 betula verr
8	159	94.6	160	Q546U3_BETVE	Q546u3 betula verr
9	159	94.6	160	Q96368_BETVE	Q96368 betula verr
10	159	94.6	160	Q96371_BETVE	Q96371 betula verr
11	159	94.6	160	Q9SCI0_BETVE	Q9sci0 betula verr
12	159	94.6	160	Q9SCI2_BETVE	Q9sci2 betula verr
13	158	94.0	159	BEVIG_BETVE	P43177 betula verr
14	158	94.0	159	BEVIG_BETVE	P43185 betula verr
15	158	94.0	159	BEVIL_BETVE	Q23746 betula verr
16	158	94.0	159	Q23746_BETVE	Q23746 betula verr
17	158	94.0	159	Q546V1_BETVE	Q546v1 betula verr
18	158	94.0	160	Q23751_BETVE	Q23751 betula verr
19	158	94.0	160	Q23753_BETVE	Q23753 betula verr
20	158	94.0	160	Q96365_BETVE	Q96365 betula verr
21	158	94.0	160	Q96366_BETVE	Q96366 betula verr
22	158	94.0	160	Q9A9S2_GROSI	Q9ays2 betula plat
23	158	94.0	160	Q9A9S3_GROSI	Q9ays3 betula plat
24	158	94.0	160	Q9A9S4_GROSI	Q9ays4 betula plat
25	158	94.0	160	Q9SCH5_BETVE	Q9sch5 betula verr
26	158	94.0	160	Q9SCI3_BETVE	Q9sci3 betula verr
27	158	94.0	160	Q9SWY0_BETVE	Q9swy0 betula verr
28	158	94.0	160	Q9SCH7_BETVE	Q9sch7 betula verr
29	156	92.9	120	Q9SCH7_BETVE	Q9sch7 betula verr
30	156	92.9	160	Q24642_BETVE	Q24642 betula verr
31	156	92.9	160	Q96370_BETVE	Q96370 betula verr

32	156	92.9	160	2	Q9SCH8_BETVE	Q9sch8 betula verr
33	156	92.9	160	2	Q9SCH9_BETVE	Q9sch9 betula verr
34	153	91.1	159	1	BEVIE_BETVE	P43178 betula verr
35	153	91.1	159	1	BEVIF_BETVE	P43179 betula verr
36	153	91.1	159	1	BEVIL_BETVE	P43183 betula verr
37	153	91.1	159	2	Q23750_BETVE	O23750 betula verr
38	153	91.1	160	2	Q23754_BETVE	O23754 betula verr
39	153	91.1	160	2	Q96367_BETVE	Q96367 betula verr
40	148	88.1	160	2	Q39426_BETVE	Q39426 betula verr
41	145	86.3	159	2	O23748_BETVE	O23748 betula verr
42	145	86.3	160	2	Q9SYW2_BETVE	Q9syw2 betula verr
43	140	83.3	160	2	Q9431_BETVE	Q9431 betula verr
44	136	81.0	160	2	Q39453_CORAV	Q39453 corylus ave
45	136	81.0	161	2	Q96382_CARBE	Q96382 carpinus be

ALIGNMENTS

RESULT 1
Q9SCI1_BETVE
ID Q9SCI1_BETVE PRELIMINARY; PRT; 120 AA.
AC Q9SCI1;
DT 01-MAY-2000 (Tremblrel. 13, Created)
DT 01-MAY-2000 (Tremblrel. 13, Last sequence update)
DT 01-JUN-2003 (Tremblrel. 24, Last annotation update)
DE Pollen allergen Betv1, isoform at14.
GN Names=Betv1;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
OC eurosid1 I; Fagales; Betulaceae; Betula.
RX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pollen;
RX MEDLINE=99437514; PubMed=10509815; DOI=10.1016/S0161-5890(99)00078-4;
RA Friedl-Hajek R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
Leberl K., Scheiner O., Breiteneder H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
of the protein derived from Austrian birch pollen."
RL Mol. Immunol. 36:639-645(1999).
DR EMBL; AJ006905; CAA07320.1; -; mRNA.
DR HSSP; P15494; 1B6F.
DR SMR; Q9SCI1; 2-119.
DR InterPro; IPR000916; Bet v I.
DR Pfam; PF00407; Bet v I: I_
DR PRINTS; PR00634; BETALLERGEN.
DR ProDom; PD000531; Bet_v_I; 1.
SQ SEQUENCE 120 AA; 13055 MW; 95EB4309C4CB4CBF CRC64;

Query Match 94.6%; Score 159; DB 2; Length 120;
Best Local Similarity 100.0%; Pred. No. 4.5e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
|||||
Db 75 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 104
|||||

RESULT 2
BEVIA_BETVE
ID BEVIA_BETVE STANDARD; PRT; 159 AA.
AC P15494; Q96369;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 10-MAY-2005 (Rel. 47, Last annotation update)
DE Major pollen allergen Bet v 1-A (Bet v I-A).
GN Names=BetVIA; Synonyms=BETVI;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
OC rosids; eurosid1 I; Fagales; Betulaceae; Betula.

OX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE, AND PROTEIN SEQUENCE OF 1-34.
RC TISSUE=Pollen;
RX MEDLINE=90005395; PubMed=2571499;
RA Breiteneder H., Pettenburger K., Bito A., Valenta R., Kraft D.,
RA Rumpold H., Scheiner O., Breitenbach M.;
RT "The gene coding for the major birch pollen allergen Betv1, is highly
RL homologous to a pea disease resistance response gene.";
RL EMBO J. 8:1935-1938(1989).
RN [2]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pollen;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DBJ databases.
RN [3]
RP PROTEIN SEQUENCE.
RC TISSUE=Pollen;
RX MEDLINE=95155322; PubMed=78523235; DOI=10.1074/jbc.270.6.2607;
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hofman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning";
RL J. Biol. Chem. 270:2607-2613(1995).
RN [4]
RP PARTIAL PROTEIN SEQUENCE.
RX MEDLINE=91317572; PubMed=2101127;
RA Elvaved S., Vik H.;
RT "Purification and N-terminal amino acid sequence of two birch pollen
RT isoallergens (Bet v I and Bet v II).";
RL Int. Arch. Allergy Appl. Immunol. 93:378-384 (1990).
RN [5]
RP X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS), AND STRUCTURE BY NMR.
RX MEDLINE=97102431; PubMed=8946858;
RA Gajhede M., Osmark P., Poulsen P.M., Ipsen H., Larsen J.N.,
RA van Neerven R.J.J., Schou C., Loewenstein H., Spangfort M.D.;
RT "X-ray and NMR structure of Bet v 1, the origin of birch pollen
RT allergy.";
RL Nat. Struct. Biol. 3:1040-1045(1996).
CC -!- SUBCELLULAR LOCATION: Cytoplasmic.
CC -!- ALLERGEN: Causes an allergic reaction in human. Is a cause of type
CC I allergic reactions in Europe, North America and USSR.
CC -!- SIMILARITY: Belongs to the Betv1 family.
CC -----
CC This Swiss-Prot entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use as long as its content is in no way modified and this statement is not
CC removed.
CC -----
DR EMBL; X15877; CAA33887.1; -; mRNA.
DR EMBL; Z80098; CAB02153.1; -; mRNA.
DR EMBL; Z80099; CAB02154.1; -; mRNA.
DR EMBL; Z80104; CAB02159.1; -; mRNA.
DR FIR; S05376; S05376.
DR PDB; 1B6F; NMR; A=1-159.
DR PDB; 1BTV; NMR; @=1-159.
DR PDB; 1BV1; X-ray; @=1-159.
DR PDB; 1FSK; X-ray; A/D/G/J=1-159.
DR PDB; 1LMT; X-ray; A=1-159.
DR PDB; 1QMR; X-ray; A=1-159.
DR InterPro; IPR000916; Bet v I.
DR Pfam; PF00407; Bet v I; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR ProDom; PD000531; Bet v I; 1.
DR PROSITE; PS00451; PATHOGENESIS BETV1; 1.
KW 3D-structure; Allergen; Direct protein sequencing; Multigene family;
KW Pathogenesis-related protein; Plant defense.
FT INIT MET 0
FT STRAND 62 62 F -> L.
FT STRAND 2 11
FT HELIX 15 22

FT TURN 23 25
FT HELIX 26 33
FT TURN 35 37
FT STRAND 40 45
FT TURN 50 51
FT STRAND 53 57
FT TURN 60 61
FT STRAND 66 75
FT TURN 76 79
FT STRAND 80 88
FT TURN 89 90
FT STRAND 92 92
FT TURN 93 94
FT STRAND 95 106
FT TURN 108 109
FT STRAND 112 122
FT TURN 124 125
FT HELIX 130 153
FT TURN 155 159
SQ SEQUENCE 159 AA; 17440 MW; 96E181194BBA83E6 CRC64;
Query Match 94.6%; Score 159; DB 1; Length 159;
Best Local Similarity 100.0%; Pred. No. 6e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
|||||
DB 74 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 103
RESULT 3
Q546V0 BETVE PRELIMINARY; PRT; 159 AA.
AC Q546V0;
DT 13-SEP-2005 (TrEMBLrel. 31, Created)
DT 13-SEP-2005 (TrEMBLrel. 31, Last sequence update)
DT 13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
DE Pollen allergen, Betv1 (fragment).
OS Name=Betv1;
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
OC rosids; eurosids I; Fagales; Betulaceae; Betula.
OX NCBI_TaxID=3505;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Leaves;
RA Cvitanich C., Larsen J.N.;
RT "Studies of Bet v 1 gene polymorphism using chromosomal DNA from
RT individual plants.";
RL Submitted (SEP-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; AJ001553; CAA04825.1; -; Genomic DNA.
KW Pathogenesis-related protein; Plant defense.
FT NON_TER 1
SQ SEQUENCE 159 AA; 17440 MW; 96E181194BBA83E6 CRC64;
Query Match 94.6%; Score 159; DB 2; Length 159;
Best Local Similarity 100.0%; Pred. No. 6e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
|||||
DB 74 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 103
RESULT 4
Q9SCH6 BETVE PRELIMINARY; PRT; 160 AA.
AC Q9SCH6;
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE Pollen allergen Betv1, isoform at5.

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 09:44:15 ; Search time 24.4917 Seconds
(without alignments)
104.645 Million cell updates/sec

Title: US-10-026-911-6
Perfect score: 168
Sequence: 1 CVDHTNFKYNSVIEGGPIGDTLEKISNEIK 31

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 572060 seqs, 82675679 residues

Total number of hits satisfying chosen parameters: 572060

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA.*
1: /cgn2_6/prodata/1/iaa/5 COMB.pep.*
2: /cgn2_6/prodata/1/iaa/6 COMB.pep.*
3: /cgn2_6/prodata/1/iaa/H COMB.pep.*
4: /cgn2_6/prodata/1/iaa/PCUTUS COMB.pep.*
5: /cgn2_6/prodata/1/iaa/RE COMB.pep.*
6: /cgn2_6/prodata/1/iaa/backfiles1.pep.*

pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	159	94.6	160	1	US-07-847-010-23
2	117	69.6	160	1	US-07-847-010-3
3	107	63.7	160	1	US-07-847-010-14
4	107	63.7	160	1	US-07-847-010-20
5	101	60.1	160	1	US-07-847-010-11
6	101	60.1	160	1	US-07-847-010-17
7	77	45.8	161	2	US-08-955-629C-2
8	71	42.3	158	6	5312912-2
9	65	38.7	158	2	US-08-964-722-2
10	55	32.7	158	2	US-08-199-219-6
11	51	30.4	414	2	US-09-107-532A-7057
12	49	29.2	476	2	US-09-248-796A-23131
13	48.5	28.9	1939	2	US-09-489-039A-8120
14	48.5	28.9	1939	2	US-09-949-016-6925
15	48.5	28.9	1942	2	US-09-949-016-8135
16	48	28.6	201	1	US-08-469-667-18
17	48	28.6	201	1	US-09-224-110-18
18	48	28.6	201	2	US-09-988-292A-18
19	48	28.6	201	4	PCT-US95-07289-18
20	48	28.6	260	1	US-08-015-973-4
21	48	28.6	260	1	US-08-448-164-4
22	48	28.6	260	2	US-08-081-929-4
23	48	28.6	260	2	US-10-000-954-4
24	48	28.6	261	1	US-08-015-986A-8
25	48	28.6	261	1	US-08-446-363-8
26	48	28.6	261	2	US-09-802-674-4
27	48	28.6	310	2	US-09-134-001C-4783

28	47	28.0	302	1	US-08-467-948A-30	Sequence 30, Appl
29	47	28.0	302	2	US-08-467-947A-30	Sequence 30, Appl
30	47	28.0	419	2	US-09-252-991A-30457	Sequence 30457, A
31	47	28.0	862	2	US-09-538-092-627	Sequence 627, App
32	47	28.0	1382	2	US-09-171-991-9	Sequence 9, Appl
33	47	28.0	1388	2	US-09-949-016-10817	Sequence 10817, A
34	46.5	27.7	224	1	US-08-278-091-12	Sequence 12, Appl
35	46.5	27.7	224	1	US-08-483-859-12	Sequence 12, Appl
36	46.5	27.7	224	1	US-08-472-173-12	Sequence 12, Appl
37	46.5	27.7	224	1	US-08-487-167-12	Sequence 12, Appl
38	46.5	27.7	224	1	US-08-482-816-12	Sequence 12, Appl
39	46.5	27.7	224	1	US-08-296-149-12	Sequence 12, Appl
40	46.5	27.7	224	1	US-08-801-493-12	Sequence 12, Appl
41	46.5	27.7	224	1	US-08-615-271-12	Sequence 12, Appl
42	46.5	27.7	224	2	US-09-074-660-12	Sequence 12, Appl
43	46.5	27.7	224	2	US-09-074-659-12	Sequence 12, Appl
44	46.5	27.7	224	2	US-09-106-468-12	Sequence 12, Appl
45	46.5	27.7	224	2	US-09-106-466A-12	Sequence 12, Appl

ALIGNMENTS

RESULT 1
US-07-847-010-23
; Sequence 23, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 23:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:

; ORGANISM: birch (Betula sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERCON AB, ENGELHOLM, SWEDEN
US-07-847-010-23

Query Match 94.6%; Score 159; DB 1; Length 160;
Best Local Similarity 100.0%; Pred. No. 6.4e-17;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
|||||:|||||:|||||:|||||:|||||
Db 75 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 104

RESULT 2
US-07-847-010-3
; Sequence 3, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: Alder (Alnus sp.)
US-07-847-010-3

Query Match 69.6%; Score 117; DB 1; Length 160;
Best Local Similarity 70.0%; Pred. No. 2.3e-10;
Matches 21; Conservative 4; Mismatches 5; Indels 0; Gaps 0;

QY 2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
|||:|||||:|||||:|||||:|||||

Db 75 VDRVNFKYSFVIEGAVGDALEKVCNEIK 104

RESULT 3
US-07-847-010-14
; Sequence 14, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 14:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERCON AB, ENGELHOLM, SWEDEN
US-07-847-010-14

Query Match 63.7%; Score 107; DB 1; Length 160;
Best Local Similarity 63.3%; Pred. No. 8.6e-09;
Matches 19; Conservative 7; Mismatches 4; Indels 0; Gaps 0;

QY 2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
|||||:|||||:|||||:|||||:|||||
Db 75 VDHTNFKYSYTVIEGDVLGDKLEKVCSELK 104

RESULT 4
US-07-847-010-20
; Sequence 20, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo


```
; TYPE: PRT
; ORGANISM: Betula pendula
US-09-981-009B-1

Query Match          94.6%; Score 159; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 4.8e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
Db  74 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 103

RESULT 3
US-09-847-208-34
; Sequence 34, Application US/09847208
; Publication No. US20030082190A1
; GENERAL INFORMATION:
; APPLICANT: Saxon, Andrew
; APPLICANT: Zhang, Ke
; APPLICANT: Zhu, Daocheng
; TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
; FILE REFERENCE: ICB-MEDIATED ALLERGIC DISEASES
; CURRENT APPLICATION NUMBER: US/09/847,208
; CURRENT FILING DATE: 2001-05-01
; NUMBER OF SEQ ID NOS: 177
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 34
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa (White birch) (Betula pendula)
US-09-847-208-34

Query Match          94.6%; Score 159; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 4.8e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
Db  74 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 103

RESULT 4
US-09-957-806A-6
; Sequence 6, Application US/09957806A
; Publication No. US20050181446A1
; GENERAL INFORMATION:
; APPLICANT: Roggen, Erwin
; APPLICANT: Ernst, Steffen
; APPLICANT: Svendsen, Allan
; APPLICANT: Friis, Esben
; APPLICANT: Osten, Claus
; TITLE OF INVENTION: PROTEIN VARIANTS HAVING MODIFIED IMMUNOGENICITY
; FILE REFERENCE: 10021.204-US
; CURRENT APPLICATION NUMBER: US/09/957,806A
; CURRENT FILING DATE: 2001-09-21
; NUMBER OF SEQ ID NOS: 248
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 6
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula pendula
US-09-957-806A-6

Query Match          94.6%; Score 159; DB 3; Length 159;
Best Local Similarity 100.0%; Pred. No. 4.8e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
Db  74 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 103

RESULT 5
US-10-001-245-3
; Sequence 3, Application US/10001245
; Publication No. US20030175312A1
; GENERAL INFORMATION:
; APPLICANT: HOLM, Jens
; APPLICANT: IPSEN, Henrik
; APPLICANT: LARSEN, Jorgen N.
; APPLICANT: SPANGFORT, Michael D.
; TITLE OF INVENTION: No. US20030175312A1el mutant allergens
; FILE REFERENCE: 4305/IH942-US2
; CURRENT APPLICATION NUMBER: US/10/001,245
; CURRENT FILING DATE: 2001-11-15
; PRIOR APPLICATION NUMBER: US 60/298,170
; PRIOR FILING DATE: 2001-06-14
; PRIOR APPLICATION NUMBER: US 60/249,361
; PRIOR FILING DATE: 2000-11-16
; NUMBER OF SEQ ID NOS: 217
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 3
; LENGTH: 159
; TYPE: PRT
; ORGANISM: Betula verrucosa
; FEATURE:
; NAME/KEY: mutation
; LOCATION: (28)..(28)
; OTHER INFORMATION:
; FEATURE:
; NAME/KEY: mutation
; LOCATION: (32)..(32)
; OTHER INFORMATION:
; FEATURE:
; NAME/KEY: mutation
; LOCATION: (45)..(45)
; OTHER INFORMATION:
; FEATURE:
; NAME/KEY: mutation
; LOCATION: (108)..(108)
; OTHER INFORMATION:
US-10-001-245-3

Query Match          94.6%; Score 159; DB 4; Length 159;
Best Local Similarity 100.0%; Pred. No. 4.8e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  2 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 31
Db  74 VDHTNFKYNSVIEGGPIGDTLEKISNEIK 103

RESULT 6
US-10-001-245-92
; Sequence 92, Application US/10001245
; Publication No. US20030175312A1
; GENERAL INFORMATION:
; APPLICANT: HOLM, Jens
; APPLICANT: IPSEN, Henrik
; APPLICANT: LARSEN, Jorgen N.
; APPLICANT: SPANGFORT, Michael D.
; TITLE OF INVENTION: No. US20030175312A1el mutant allergens
; FILE REFERENCE: 4305/IH942-US2
; CURRENT APPLICATION NUMBER: US/10/001,245
; CURRENT FILING DATE: 2001-11-15
; PRIOR APPLICATION NUMBER: US 60/298,170
; PRIOR FILING DATE: 2001-06-14
; PRIOR APPLICATION NUMBER: US 60/249,361
; PRIOR FILING DATE: 2000-11-16
; NUMBER OF SEQ ID NOS: 217
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 92
; LENGTH: 159
; TYPE: PRT
```

GenCore version 5.1.7
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: April 17, 2006, 10:05:54 ; Search time 6.85083 Seconds
(without alignments)
192.264 Million cell updates/sec

Title: US-10-026-911-6

Perfect score: 168

Sequence: 1 CVDHTNFKYNSVIEGGPIGDTLEKISNEIK 31

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 217505 seqs, 42489236 residues

Total number of hits satisfying chosen parameters: 217505

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%
Listing first 45 summaries

Database :

Published Applications AA New.*

- 1: /SIDSS/ptodata/1/pubppa/US08_NEW_PUB.pep.*
- 2: /SIDSS/ptodata/1/pubppa/US06_NEW_PUB.pep.*
- 3: /SIDSS/ptodata/1/pubppa/US07_NEW_PUB.pep.*
- 4: /SIDSS/ptodata/1/pubppa/PCT_NEW_PUB.pep.*
- 5: /SIDSS/ptodata/1/pubppa/US09_NEW_PUB.pep.*
- 6: /SIDSS/ptodata/1/pubppa/US10_NEW_PUB.pep.*
- 7: /SIDSS/ptodata/1/pubppa/US11_NEW_PUB.pep.*
- 8: /SIDSS/ptodata/1/pubppa/US60_NEW_PUB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
1	159	94.6	160	6	US-10-498-026-81
2	159	94.6	172	7	US-11-102-883-18
3	159	94.6	289	7	US-11-102-883-26
4	159	94.6	300	7	US-11-102-883-6
5	77	45.8	161	7	US-11-172-740-184
6	77	45.8	161	7	US-11-172-740-185
7	77	45.8	161	7	US-11-172-740-186
8	77	45.8	161	7	US-11-172-740-187
9	62	36.9	428	7	US-11-079-463-7636
10	50	29.8	213	7	US-11-096-568A-5891
11	50	29.8	235	7	US-11-096-568A-5890
12	50	29.8	239	7	US-11-096-568A-5889
13	49	29.2	365	7	US-11-087-099-10360
14	49	29.2	365	7	US-11-188-298-9551
15	49	29.2	940	7	US-11-052-554A-175
16	48	28.6	226	7	US-11-182-480-62
17	48	28.6	251	7	US-11-188-298-9566
18	48	28.6	261	6	US-10-055-877-164
19	48	28.6	261	7	US-11-177-506-31
20	48	28.6	268	7	US-11-182-480-30
21	47.5	28.3	423	7	US-11-188-298-5718
22	47	28.0	1388	6	US-10-821-234-1143
23	46.5	27.7	227	7	US-11-104-111-15
24	46.5	27.7	351	7	US-11-072-512-3529
25	46.5	27.7	419	7	US-11-174-150-40

Sequence 39, Appl
Sequence 2, Appl
Sequence 2, Appl
Sequence 2, Appl
Sequence 4, Appl
Sequence 4, Appl
Sequence 4, Appl
Sequence 17, Appl
Sequence 10, Appl
Sequence 11, Appl
Sequence 3400, Ap
Sequence 340, Appl
Sequence 394, App
Sequence 394, App
Sequence 394, App
Sequence 327, App
Sequence 556, App
Sequence 556, App
Sequence 556, App
Sequence 556, App

26 46.5 27.7 436 7 US-11-174-150-39
27 46.5 27.7 1206 7 US-11-058-727-2
28 46.5 27.7 1206 7 US-11-108-389-2
29 46.5 27.7 1206 7 US-11-224-624-2
30 46.5 27.7 1210 7 US-11-058-727-4
31 46.5 27.7 1210 7 US-11-108-389-4
32 46.5 27.7 1210 7 US-11-224-624-4
33 46 27.4 224 7 US-11-104-111-17
34 46 27.4 330 7 US-11-152-892-10
35 46 27.4 342 7 US-11-152-892-11
36 46 27.4 455 7 US-11-072-512-3400
37 46 27.4 943 6 US-10-475-204-34
38 46 27.4 1184 6 US-10-131-826A-394
39 46 27.4 1184 6 US-10-973-115B-394
40 46 27.4 1184 6 US-11-290-153-394
41 45.5 27.1 119 7 US-11-124-368A-327
42 45 26.8 162 6 US-10-194-487-556
43 45 26.8 162 6 US-10-195-883-556
44 45 26.8 162 6 US-10-195-888-556
45 45 26.8 162 6 US-10-195-889-556

ALIGNMENTS

RESULT 1
US-10-498-026-81
; Sequence 81, Application US/10498026
; Publication No. US20060024334A1
; GENERAL INFORMATION:
; APPLICANT: CIRCASSIA LIMITED
; TITLE OF INVENTION: IMMUNOTHERAPEUTIC METHODS AND SYSTEMS
; FILE REFERENCE: N.87430 WO GCW
; CURRENT APPLICATION NUMBER: US/10/498,026
; CURRENT FILING DATE: 2004-06-04
; NUMBER OF SEQ ID NOS: 118
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 81
; LENGTH: 160
; TYPE: PRT
; ORGANISM: Betula pendula
US-10-498-026-81

Query Match 94.6%; Score 159; DB 6; Length 160;
Best Local Similarity 100.0%; Pred. No. 4.1e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 VDHNTFKYNSVIEGGPIGDTLEKISNEIK 31
DB 75 VDHNTFKYNSVIEGGPIGDTLEKISNEIK 104

RESULT 2

US-11-102-883-18
; Sequence 18, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lamping, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Baigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods an
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2

```
; SEQ ID NO 18
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Betula verrucosa
US-11-102-883-18

Query Match          94.6%; Score 159; DB 7; Length 172;
Best Local Similarity 100.0%; Pred. No. 4.5e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  2 VDHTNPKYNSVIEGGPIGDTLEKISNEIK 31
    ||||||||||||||||||||||||||||
Db   87 VDHTNPKYNSVIEGGPIGDTLEKISNEIK 116

RESULT 3
US-11-102-883-26
; Sequence 26, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lamping, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 26
; LENGTH: 289
; TYPE: PRT
; ORGANISM: tat-ii-bet v 1
US-11-102-883-26

Query Match          94.6%; Score 159; DB 7; Length 289;
Best Local Similarity 100.0%; Pred. No. 8.1e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  2 VDHTNPKYNSVIEGGPIGDTLEKISNEIK 31
    ||||||||||||||||||||||||||||
Db   204 VDHTNPKYNSVIEGGPIGDTLEKISNEIK 233

RESULT 4
US-11-102-883-6
; Sequence 6, Application US/11102883
; Publication No. US20050281816A1
; GENERAL INFORMATION:
; APPLICANT: Lamping, Norbert
; APPLICANT: Cramer, Reto
; APPLICANT: Fluckiger, Sabina
; APPLICANT: Daigle, Isabelle
; TITLE OF INVENTION: Modular Antigen Transporter Molecules (MAT Molecules) for
; TITLE OF INVENTION: Modulating Immune Reactions, Associated Constructs, Methods and
; TITLE OF INVENTION: Uses Thereof
; FILE REFERENCE: 03100234pa
; CURRENT APPLICATION NUMBER: US/11/102,883
; CURRENT FILING DATE: 2005-04-11
; PRIOR APPLICATION NUMBER: EP02022774.0
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: PCT/EP2003/011190
; PRIOR FILING DATE: 2003-10-09
; NUMBER OF SEQ ID NOS: 44
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 6
```

```
; LENGTH: 300
; TYPE: PRT
; ORGANISM: Human immunodeficiency virus + Homo sapiens + Betula verrucosa
US-11-102-883-6

Query Match          94.6%; Score 159; DB 7; Length 300;
Best Local Similarity 100.0%; Pred. No. 8.5e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  2 VDHTNPKYNSVIEGGPIGDTLEKISNEIK 31
    ||||||||||||||||||||||||||||
Db   215 VDHTNPKYNSVIEGGPIGDTLEKISNEIK 244

RESULT 5
US-11-172-740-184
; Sequence 184, Application US/11172740
; Publication No. US20060057724A1
; GENERAL INFORMATION:
; APPLICANT: MASCIA, Peter
; APPLICANT: ALEXANDROV, Nickolai
; APPLICANT: BROVER, Vyacheslav
; TITLE OF INVENTION: NUCLEOTIDE SEQUENCES AND POLYPEPTIDES ENCODED THEREBY USEFUL FOR
; TITLE OF INVENTION: PLANT CHARACTERISTICS AND PHENOTYPES
; FILE REFERENCE: 2750-1602PUS2
; CURRENT APPLICATION NUMBER: US/11/172,740
; CURRENT FILING DATE: 2005-06-30
; PRIOR APPLICATION NUMBER: 60/583,621
; PRIOR FILING DATE: 2004-06-30
; PRIOR APPLICATION NUMBER: 60/584,829
; PRIOR FILING DATE: 2004-06-30
; PRIOR APPLICATION NUMBER: 60/584,800
; PRIOR FILING DATE: 2004-06-30
; NUMBER OF SEQ ID NOS: 2523
; SEQ ID NO 184
; LENGTH: 161
; TYPE: PRT
; ORGANISM: Glycine max
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION: (1)..(161)
; OTHER INFORMATION: Public GI no. 32165478
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION:
; OTHER INFORMATION: Utility: Useful for delaying flowering time
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION:
; OTHER INFORMATION: Utility: Useful for increasing chlorophyll and photosynthetic ca
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION:
; OTHER INFORMATION: Utility: Useful for making plants with increased biomass
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION:
; OTHER INFORMATION: Utility: Useful for making plants with increased biomass and fol
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION:
; OTHER INFORMATION: Utility: Useful for making smaller plants
; OTHER INFORMATION: Utility: Useful for making smaller plants
US-11-172-740-184

Query Match          45.8%; Score 77; DB 7; Length 161;
Best Local Similarity 46.7%; Pred. No. 0.0014;
Matches 14; Conservative 4; Mismatches 12; Indels 0; Gaps 0;

QY  2 VDHTNPKYNSVIEGGPIGDTLEKISNEIK 31
    :|||||:|||||:|
Db   76 LDEENFVKYTAIEGGPLGKLLSSACFEVK 105
```